A SURVEY:

THE PRINCIPAL ELEMENTS OF SAFETY PROGRAMS OF NINE MAJOR AMERICAN SHIPYARDS

U.S. DEPARTMENT OF TRANSPORTATION
Maritime Administration and
U.S. NAVY

in cooperation with
Bethlehem Steel Corporation
Baltimore Marine Division

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This publication is the deliverable of a research project managed by the consulting firm Win/Win Strategies of Bethlehem, Pennsylvania, for the National Shipbuilding Research Program (NSRP) under Contract No. DTMA91-84-C-41027 between the U. S. Maritime Administration and Bethlehem Steel Corporation (BSC) and subcontract SP5-87-4 between BSC and Win/Win Strategies.

The NSRP is joint government and industry program dedicated to improving productivity of shipbuilding, overhaul, modernization and repair by seeking, developing and implementing new ideas, technologies and equipment in the United States shipyards, both private and public.

This research project was commissioned by Panel SP-5, Human Resource Innovation, of the Ship Production Committee (SPC) of the Society of Naval Architects and Marine Engineers (SNAME) under the auspices of the NSRP. Panel membership is composed primarily of naval and commercial shipyard managers and leaders of labor unions which represent employees at several of those shipyards and also includes representatives of the U. S. Navy and the Maritime Administration.

The objective of Panel SP-5 is to develop, test and disseminate new management practices and organizational forms which better tap the potential of shipbuilding human resources for the purpose of increasing shipyard productivity.

The purpose of this research project was to collect a significant amount of detailed information concerning the principal elements of safety programs currently in effect in major American shipyards so as to:

- identify the core elements common to all or most of such safety programs;
- identify the managerial philosophies that underlie such programs;
- provide base line information so that participating yards and others in the industry can make comparisons and evaluations of their own safety programs; and
- bring about an awareness throughout the industry of new initiatives that have been tried and found successful in one or another shipyard and also an awareness of experiments which are taking place with new and/or changed technologies designed to have a positive influence on safety program goals.

The ultimate objective of the project is to reduce the costs of industrial accidents including medical and hospital costs, workers' compensation costs and the costs due to lost time which attends virtually every accident. That objective is in keeping with the objectives of Panel SP-5 and the dedication of the NSRP to improving productivity in United States shipyards.

Frank Long, principal consultant of the firm of Win/Win Strategies, participated in the design of the survey document, held face-to-face discussions with those responsible at each yard for its completion, conducted the survey, compiled the results and is the author of this report.

The author acknowledges with gratitude the contributions of the members of the ad hoc committee of Panel SP-5 \vho were responsible for the creation of the survey document. Those members were:

Nancy Harris — Maritime Administration,
Joanna Jones — Bath Iron Works,
Tom Sheldon — Electric Boat-Groton,
Steve Sullivan — Bethlehem/Sparrows Point, and
Duane Williams — Puget Sound Naval Shipyard

Those responsible for completing the survey document at each of the yards are also acknowledged for their expertise, for the substantial effort that went into completing the lengthy questionnaire, and for their patience in reviewing the drafts which were circulated to them to check the accuracy and completeness of the recorded responses.

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SECTION 1
BACKGROUND

The ad hoc committee of Panel SP-5 which designed the survey document drew from (a) a pool of suggested survey questions submitted to it by Bethlehem Steel/ Sparrows Point, Charleston Naval Shipyard, General Dynamics-Electric Boat and Puget Sound, Naval Shipyard and (b) its own expertise in safety program design.

Panel SP-5 approved the survey document at its regular meeting in San Diego in December of 1988. The subcontract for the performance of the survey was issued on May 15, 1989. By letter dated May 17, 1989, twelve shipyards, eight private and four public, were asked by the author to participate in the survey. That letter states, in pertinent part:

"The following twelve shipyards are being asked to participate:

Avondale	NASSCO
Bath Iron Works	Newport News
Bethlehem Steel/ Sparrows Pt.	Norfolk Naval Shipyard
General Dynamics- Electric Boat	Norshipco
Ingalls	Philadelphia Naval Shipyard
Mare Island Naval Shipyard	Puget Sound Naval Shipyard

"In order to maintain anonymity, individual shipyards will not be identified in the report. Where specific reference is necessary or desirable, an individual shipyard will be referred to only by a number arbitrarily assigned by Win/Win Strategies. Win/Win Strategies has pledged to maintain the sanctity of that anonymity.

"The subcontract also contemplates an on-site visit by the surveyor to ensure, among other things, that each respondent clearly understands what information or data is being sought by the survey questions so as to obtain as great a degree of consistency of response as possible."

A letter dated June 7, 1989, on the letterhead of the Department of the Navy, Naval Sea Systems Command, states as follows:

"From: Commander, Naval Sea Systems Command (SEA 070)

To: Commander, All Naval Shipyards

"Subj.: NATIONAL SHIPBUILDING RESEARCH PROGRAM PANEL SP-5 HUMAN RESOURCE INNOVATION SAFETY PROGRAM SURVEY QUESTIONNAIRE

"Encl.: (1) Safety and Health Program Questionnaire

"1. The National Shipbuilding Research Program (NSRP) is supported by the Naval Sea Systems Command. We encourage shipyard participation and cooperation in NSRP Ship Production Panels and the initiatives generated by the panels. We support and encourage your cooperation in responding to enclosure (l). Point of contact for questions regarding the NSRP or this questionnaire should be directed by Manson Tillman, NAVSEA 07011, (A) 286-4477 or Commercial (202) 746-4477.

"Roy R. Rogers"
By direction

All twelve shipyards agreed to participate and a visit was, in fact, made to each yard to answer questions and to review the draft responses before the final completed survey document was returned to the author.

The author's reception at each yard was warm, cordial and cooperative. There was no indication at any yard that the survey document would not be completed and returned. In addition, a suggestion was made at one of the yards early in the visit itinerary that a follow-up meeting beheld of all those completing the survey document. The purpose of the meeting would be to review and compare responses and to discuss safety program matters beyond the scope of the Survey itself, in advance of publication of this report. That suggestion was supported by all participants. (That meeting did take place in New Orleans on October 22 & 23, 1990 and the substance of discussions in that meeting is recorded in Appendix 3 of this report.)

Three of the twelve shipyards, two private and one public, without notification or explanation, failed to return a completed questionnaire. Repeated follow-up telephone calls were made by the author to no avail. This report, therefore, contains the responses of those nine yards, six private and three public, that completed the survey document.

While it is unfortunate that 100% participation was not achieved, the validity of the survey is not materially affected. The nine participating shipyards comprise an excellent and representative cross section of the major yards in the United States shipbuilding industry.

Because of the competitive nature of the firms in the industry and the historic arms-length relationships that have developed among them in sensitive areas that affect the bottom line, there historically has been limited formal exchange of detailed information as to the principal elements of safety programs. That is not to say, however, that the shipyard experts in safety and health matters do not meet from time-to-time to exchange information. On the contrary, information is exchanged in regional and national meetings of the National Safety

Congress, and in regular meetings of the Health and Safety Committee of Shipbuilders Council of America, to name but two.

Exchanges of such information between private and public shipyards, however, have been virtually non-existent. Indeed, public shipyards are not members of Shipbuilders Council of America. To the collective knowledge of the members of Panel SP-5, there has never been an exchange of information so comprehensive and so detailed as was contemplated when this project was conceived and approved.

One of the conventions used in the creation of the survey document was the use of the acronym OSH to stand for occupational safety and health. That convention has tended to lead some readers to interpret that acronym as standing for the Occupational Safety and Health Administration. Readers are cautioned against that latter interpretation.

There is general acceptance of the observation that each shipyard in the industry has its own personality. That personality is the product of many factors including the yard's history, its size, its organizational structure, its employee relations atmosphere and its management style. It is dynamic, not static, and adjusts to internal and external influences. Each yard, therefore, develops and implements its policies and procedures, including those governing occupational safety and health matters, in a manner that suits its personality. Although external influences may have contributed to the development of a particular yard's safety program and elements thereof (for example, the U.S. Navy's influence on safety programs in the public shipyards), the extent to which and manner in which those influences are made manifest are affected by the yard's personality. It has often been said that what works in one yard may not work in another. Each yard is the best judge of what will work for it. Hence, value judgments about the manner in and the extent to which any yard has implemented an element covered by the survey document are made at the reader's own peril.

In seeming contradiction to the above, however, the attendees at the meeting in New Orleans referred to above engaged in an exercise in that meeting in which they prioritized the essential elements of a safety program. That exercise and its results are described in detail at the conclusion of Appendix 3 – Discussion of Responses To Certain Questions.

SECTION II
THE SURVEY

Q **1. What is the stated OSH policy of your yard or organization?**

Eight of the yards submitted statements of safety policy in the form either of policy as part of its formal Safety Program or as a stand alone document, for example, in the form of a letter from the CEO to all employees or as a Memorandum of Policy. As might be expected those statements of policy varied in degree of elaboration from the very complete to the more concise. The following is an example which contains the essential elements reflected in all of them.

"It is the policy of [yard] to establish and maintain a comprehensive Occupational Safety and Health Program which is based on the following principles:

a. Our people are our greatest asset.

b. Safety is an inseparable part of all shipyard operations, and will be appropriately integrated into all work and training activities.

c. All occupational injuries and illnesses can be prevented through recognition and prevention of hazards. Our goal is continuous long term improvement in injury/illness prevention.

d. We will comply with the OSH regulations which are applicable to our operations.

e. All employees must be involved in recognizing and preventing hazards, and complying with OSH requirements applicable to their work.

f. Managers and supervisors at all levels are responsible for the safety of the people and operations within their areas of responsibility.

g. Planning/technical personnel are responsible for determining OSH hazards and requirements associated with planned operations, and for incorporating appropriate OSH provisions into plans and procedures for accomplishing the work.

h. We will establish systems to objectively measure our progress in achieving long term improvemerit. "

An example of a more concise statement is as follows:

"It is the policy of this Shipyard that all employees will be provided with a safe and healthful work environment, which is free from recognized hazards and consistent with current federal, state and local standards. "

The one yard not submitting a formal statement of policy of the type mentioned above answered Question 1 as follows:

"To comply with laws and regulations and to go beyond when necessary to protect employees."

Q 2. Is **OSH integrated into other policies at this shipyard? If yes, please provide brief explanation.**

All yards answered affirmatively and, although expressed in various ways, all yards indicated that occupational safety and health considerations were integrated into functional procedures affecting operations throughout the shipyard. Examples of some of those statements are:

- "OSH is included in the guiding principles of the shipyards Total Quality Management Program. "
- "All policies are subject to a Safety First condition. "
- "The performance of [shipyard] is measured by only one set of criteria - whether or not we perform quality [work] on schedule, at low cost in a safe manner. "

Q 3. **At what point in the organization is responsibility for overall OSH performance placed?**

Shipyard

1 At the top
2 At the top
4 Upper Management
5 All levels — Management, supervisory, hourly
7 General Manager
9 At the top
10 1st line Supervisor
11 All employees
12 Production

Q 4. Is **OSH performance considered part of the daily responsibility of the line manager?**

All yards answered "Yes".

Q 5. **Are full time OSH personnel available to the line manager?**

All yards answered "Yes".

Q 6. **If so, how are numbers and types of OSH manning determined?**

In the Naval shipyards minimum staffing requirements are covered by a U.S. Navy Guide. Above that minimum the numbers and types are determined, as they are in the private yards, by project, process, facility and manpower considerations as evaluated vis-a-vis past practices.

Q 7. Are **OSH decisions reviewed to see that they are consistent with overall goals of the organization?**

All yards answered in the affirmative.

Q **7a. How?**

A summary of the responses would be as follows:

By review in regular meetings of various committees within whose purview safety and health matters fall.

Q 7b. **By whom?**

Answers varied from cognizant senior manager, to vice president, human resources and his staff, to the safety department and the central safety committee, to the director of safety and health and to the accident prevention committee.

Q 8. **How are individual supervisors held accountable for OSH performance?**

Q 9. How is individual supervisory OSH performance measured?

The responses to these questions indicate some confusion in the interpretation of what information was sought. By combining the questions and sorting the answers the following results:

At those yards that have a formal performance appraisal or evaluation system in effect (the Naval shipyards and certain others) it is within that system that they are held accountable. One yard responded that they are directly responsible for injuries and discrepancies, another responded they are held accountable by constant monitoring of workplace operations and another by disciplinary action from warning to discharge.

Individual performance was generally measured by injury frequency and severity rates (and, in one instance, cost of accident) of an individual supervisor's employees against a standard of which the supervisor was aware.

Q **9a. Are satisfactory standards communicated to line management?**

All yards answered in the affirmative.

Q 9b. How frequently is a supervisor apprised of his performance?

One yard answered' 'At least quarterly. Annually at review. "
One yard answered "At least monthly. Annually, at review. "
One yard answered "on an ad-hoc variance basis and, generally, at least annually".
One yard answered "at least monthly".
One yard answered "six months to one year".
One yard answered "at least twice annually".
One yard answered "hi-yearly".
One yard answered "semi-annually".
One yard answered "annually".

10. Are rewards for supervision for OSH performance mostly positive or negative?

Yard 1 – Salary increases for satisfactory performance within their performance appraisals. Shop (group) recognition for most improved injury rates quarterly. Certification and gold lapel pin for supervisors whose crew go a year without lost time injury. The yard also has "Special Act Awards" which are monetary awards for one time safety achievements.

Yard 2 – Improved overall performance ratings are used for good performance and counselling/administrative actions are used for poor performance.

Yard 4 – Recognition for efforts in injury reduction is given by the chief executive and widely publicized. OSH is an element in performance appraisals and, therefore, can either elevate an overall rating or do the opposite. Overall ratings above a satisfactory level are eligible for a monetary award based on funds available for each department.

Yard 5 – Promotions, pay raises and recognition through company news letters.

Yard 7 – Performance based compensation decisions and, where ultimately necessary, discipline.

Yard 9 – Salary merit increases and minimum letters of accommodation.

Yard 10 – Greater annual pay raises and stronger consideration for promotion.

Yard 11 — There is recognition of superior performance both through performance reviews and safety awards. Conversely, supervisors are disciplined when they are caught violating safety regulations.

Yard 12 — Chance drawing for $100/month for accident free shop.

Q 11. Does staff safety person have authority to initiate discipline for safety violations? If so, how?

Yard 1 – No.
Yard 2 – No.
Yard 4 – Yes. Recommendation to management.
Yard 5 – Yes. Formal written warning notices.
Yard 7 – Yes. By way of yard's Discipline Program.
Yard 9 – Yes. By issuing a citation to a first line supervisor.
Yard 10— Yes. Disciplinary warnings.
Yard 11 — Yes. Write-ups given to department heads for action.
Yard 12 – Yes. By contact with production management.

Q 12. What managerial or supervisory positions are authorized to stop work because of conditions regarded as unsafe?

Yard 1 – Managers, supervisors and safety staff.
Yard 2 – All management and supervisory levels.
Yard 4 – All.
Yard 5 – All.
Yard 7 – All managerial personnel.
Yard 9 – Safety/Fire; Supervisor.
Yard 10 – All levels.
Yard 11 — All managers and supervisors.
Yardd 12 – All down to first line.

Q 13. Is safety viewed as part of the day to day operations or as an autonomous program?

All yards answered "day to day".

Q 14. Is safety performance treated on a cost center basis?

Five yards answered "Yes" and four yards answered "No".

YARD	1	2	4	5	7	9	10	11	12	TOTAL
Q 15. How are accident costs allocated within the budgetary process?										
The yards which responded to this question provided the following:										
. "A cost class has been established to track lost wages due to injuries for every separate organizational entity in the yard. "										
. "Treated as a yard Overhead Account"										
• "Accident costs are allocated in the budgetary process of Workers' Compensation and special accounts".										
• "Overhead expense."										
• "Centrally budgeted."										
• "Self-insured overhead."										
Q 16. What qualifications are required for persons who have responsibility for designing or directing safety programs?										
No Special Training	*	*	*		*	*			*	o
Experience	*	*	*	*	*	*			*	6
Safety Courses	*	*	*	*	*	*			*	7
Industrial Safety Certificate				*			*			2
Bachelor's				*			*	*		3
Master's				*						1
Other				OJT						

* U. S. Navy criteria are applicable in naval shipyards.

YARD	1	2	4	5	7	9	10	11	12	TOTAL
Q 17. Does your organization have its own safety manual or code of safety **rules?**										
Yes	*	*	*	*	*	*	*	*	*	9
Q 18. Who is considered to be primarily responsible for the safety of your employees?										
Employee			*	*			*			3
His Supervisor	*			*	*	*	*	*		6
Yard Mgmt.		*					*		*	3
Safety Dept.							*	*		2
Union							*			1
Other							Subs and customers			1
Q 19. What is the ratio of full time safety and health personnel to "blue collar" worker?										AVE.
	1/333	1/210	1/300	1/450	1/650	1/252	1/350	1/345	1/670	1/490
Q 20. At what organizational level is the highest ranking person with full or part time responsibility for designing or directing safety programs?										
Top level	*	*	*	*	*	*			*	7
Middle level							*	*		2
Lower level										
Q 21. **Are safety figures, reports, achievements included** on the agenda of management meetings?										
Regularly	*	*	*	*	*	*	*	*	*	9
Occasionally										0
Q 22. Do you have yard Safety and Health committees?										
Yes	*	*	*	*	*	*	*	*	*	9
Who participates?										
Management	*	*	*	*	*	*	*	*	*	9
Unions	*	*	*	*	*	*	*	*	*	9
Hourly	*		*	*			*		*	5
Other	Key Staff					Safety Supervisor				?
Q 23. **Do** you have individual craft Safety and Health committees?										
Yes		*	*	*		*				4
Who participates?										
Dept. Head		*								1
Union		*	*	*		*				4
Supervisor		*	*	*						3
Hourly		*	*	*						3
Other			Shop supt.	Safety Mgmt.		Safety Mgmt.				3
Q 24. Is environmental control administered by a separate organization?										
Yes		*	*	*	*	*	*		*	7

Author's note: I have taken liberty with the accuracy of some of the data on this page on the grounds that the importance of attempting to preserve the anonymity of respondents outweighs the significance of the inaccuracy.

YARD	1	2	4	5	7	9	10	11	12	TOTAL	AVE
Q 25.	How do you measure your accident prevention performance?										
Yard 1	Injury rate per 200,000 hours worked.										
Yard 2	Comparison of current vs historic Incidence, Frequency and Severity rates using monthly statistical control charts for each major organizational element.										
Yard 4	Monthly reports w/injury analysis; semi annual supervisor reports which show number of mishaps per supervisor; quarterly employee reports showing employees with 3 or more mishaps during last twelve months; monthly, quarterly, annual injury statistics which show groups' efforts to meet/beat their injury reduction goal.										
Yard 5	Through accident frequency and severity assessments.										
Yard 7	All injuries/200,000 hrs.; all LWD cases/200,000 hrs.; all LWDAYS/200,000 hrs.										
Yard 9	Based on dollar cost, Frequency and Severity Rates as related to past years.										
Yard 10	Incidence rates.										
Yard 11	Comparison vs BLS for industry and comparison internally vs past.										
Yard 12	Compensable lost time accident frequency rate.										
Q 26.	Do you use OSHA record keeping statistics to measure accident prevention performance?										
Yes	*	*		*	*		*	*		6	
	If so, do you follow the "Recordkeeping Guidelines for Occupational Injuries and Illnesses" (the "Blue Book"), OMB #1220-0029, effective April 1986?										
Yes		*		*	*		*	*	*	6	
	Which statistical designations do you use?										
LWD cases	*	*	*	*	*	*	*	*		8	
Away from work	*	*	*	*	*	*	*	*		8	
Restricted work	*	*	*	*	*	*	*	*		8	
Recordable	*	*	*	*	*	*	*	*		8	
Q 27.	What were your results in 1988 for the following rates?										
LWD Incidence	6.30	9.77	7.53	4.70	16.65	16.83	16.40	12.42	2.80		10.38
Away From Work	45.20	85.61	46.90	587.00	231.80	508.35	54.04	176.37	162.02		210.81
Restricted Work	7.10	153.79	267.58	4,500.00	29.30	3.37	268.47	255.62	0.00		609.47
Recordable	21.50	21.98	16.73	27.20	51.10	49.83	68.19	32.66	42.97		36.91
Q 28.	What were your average results for the years 1985-1988 for those same rates?										
LWD Incident	8.40	9.51	7.53	4.50	11.03	15.83	11.5	12.02	2.80		9.24
Away From Work	60.80	103.13	54.30	456.00	156.49	424.29	101.00		162.02		189.75
Restricted Work	22.00	105.11	178.78	1,818.00	11.65	3.32	11.5		0.00		307.19
Recordable	25.10	23.16	16.56	16.30	27.60	24.03	41.5	29.95	42.97		27.46
Q 29.	Do you use a clinic frequency rate to measure accident/illness prevention?										
Yes	*		*			*	*		*	5	
Q 30.	Are you using another system?										
Yes		*(1)				*(2)	*(3)		*(4)	4	
System 1	The Safe-T Score which compares current frequency rates to past frequency rates to determine if fluctuations are statistically meaningful or random.										
System 2	Computerized Safety Analysis Reports, by accident type body part, nature of injury, area/locations, supervisor report, Dept. report, Direct. report - dollar cost for each. Frequency and severity rates of each Dept. and Directorate.										
System 3	Multiple Injury Employee Counseling Program.										
System 4	Compensable lost workday cases.										

YARD	1	2	4	5	7	9	10	11	12	TOTAL	AVE
Q 31.	Do you have in-facility medical sercices?										
Yes	*	*	*	*	*	*	*	*	*	9	
Contracted					*					1	
Public Self-admin.	*	*	*	*		*		*	*	6	
Med. Staff No.	6	9	38	15	1	20	6	39	8		16
No. of MDs	3	5	4	1		1	1	4	1		3
Q 32.	How many clinic visits did you average per month?										
In 1987											
Employees	500	10,273	511	3,250	702	1,825	947	4,000	1,000		2,556.44
Contractors	5	3	0	0	24	0	0	0	0		3.56
Subs	0	0	0	0	0	0	0	0	0		0.00
Other	15	0	0	0	0	0	0	0	0		1.67
In 1988											
Employees	500	12,074	468	4,333	740	1,500	799	4,000			3,051.75
Contractors	5	5	0	0	60	0	0	0			8.75
Subs	0	0	0	0	0	0	0	0			0.00
Others	15	0	0	0	0	0	0	0			1.88
Q 33.	What percentage of your clinic visits are non-occupational injuries?										
Employees	5.00	5.00	3.90	32.50	2.00	0.00	10.00	0.00	21.00		9
Contractors	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		1
Subs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0
Other	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0
Q 34.	What percentage of your clinic visits are non-occupational illnesses?										
Employees	67.00	5.00	4.78	27.50	13.00	0.00	10.00	0.00	0.00		14
Contractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0
Subs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0
Others	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0
Q 35.	What percentage of your clinic visits are:										
Foreign Body, Eye	10.00	3.44	8.00	30.00	9.00	0.40	27.00	14.90	9.00		12.42
Laceration, Hand	0.00	8.27	11.00	5.00	12.00	1.30	8.00	0.68	1.00		5.25
Laceration, Other	13.00	6.18	3.00	2.00	19.00	20.50	10.00	6.17	5.00		9.43
Back Injury	10.00	19.08	13.00	25.00	6.00	0.00	6.00	15.37	1.00		10.61
Other Spin. & Strn.	32.00	21.86	21.00	20.00	19.00	25.40	12.00	30.55	36.00		24.20
Contusions	20.00	22.22	18.00	0.00	15.00	32.20	0.00	16.28	35.00		17.63
Fractures	2.00	3.63	3.00	1.00	3.00	0.10	2.00	1.84	1.00		1.95
Bums	2.00	3.20	3.00	5.00	6.00	11.80	3.00	4.94	3.00		4.66
Amputations	0.10	0.03	0.06	0.50	1.00	0.00	0.00	0.04	0.00		0.19
Illnesses	0.00	0.11	4.78	2.00	1.00	0.00	3.00	5.06	5.00		2.33
Welding Flash	0.10	0.91	0.75	1.00	2.00	0.00	6.00	1.46	3.00		1.69
Respiratory	0.50	0.80	0.84	1.00	1.00	0.00	5.00	0.61	0.00		1.08
Dermatological	0.10	0.42	2.30	1.00	2.00	0.40	6.00	0.27	0.00		1.39
Poisoning	0.10	0.15	2.30	0.00	0.00	0.60	0.00	0.00	0.00		0.35
Carpal Tunnel	0.00	0.00	0.90	0.50	2.00	0.00	5.00	0.65	0.60		0.07
Hearing Loss	0.10	0.15	1.70	4.00	2.00	0.10	6.00	1.11	0.40		1.73
Heat Exposure	0.10	0.29	0.53	2.00	0.00	0.50	1.00	0.07	0.00		0.50
Cold Exposure	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00
All Other	9.90	9.26	5.84	0.00	0.00	6.70	0.00	0.00	0.00		3.52
TOTAL	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00		
Q 36.	Do you have an occupational alcoholism program?										
	All yards answered in the affirmative.										
Q 37.	Do you have an occupational drug abuse program?										
	All yards answered in the affirmative.										

YARD	1	2	4	5	7	9	10	11	12	TOTAL	AVE
Q 38 Do you test for substance abuse during employment?											
Yes				*	*	*	*	*	*	6	

Under what circumstances?

Two of the yards test for cause and upon the observance of any aberrant behavior.

One of the yards explained that the testing occurred when there was a potential lost time accident with probable cause; that the testing was not random, was mandatory and was not craft specific.

Another yard cited potential lost time accidents which require the atiention of a doctor, for cause and accidents resulting in damages of $500 or more, the testing was not random, was mandatory and was not craft specific.

Another stated that the testing was based on reasonable suspicion; was not random, was mandatory and was not craft specific except for the Guard Force. The Guard Force has mandatory random testing.

The other yard cited accidents involving $500 or more in property damage; cases involving reasonable suspicion and where an employee causes an accident in which medical attention is required; the testing was random under certain circumstances, was mandatory and was not craft specific.

What sampling technique do you use?

Blood				*	*		*		*.	4	
Urine				*	*	*	*	*	*	6	
Breath				*		*		*		3	

For what substances?

Of the yards that test, one tests for alcohol and all federally controlled narcotics; another tests for cocaine, THC, phencyclidine, opiates and amphetamines and, in for cause cases, barbiturates and benzodiodiazysine. Another yard tests for opiates, marijuana, cocaine, metabolic and alcohol. Another yard tests for TCT, cocaine and opiates.

Q 39. Do you conduct pre-employment physicals?

All yards answered in the affirmative.

Does it include the following tests:

Subst. abuse				*	*	*	*	*	*	6	
Hearing	*	*	*	*	*	*	*	*	*	9	
Chest X-Ray	*	*	*	*	*	*	*	*		8	
Spirometry	*	*	*	*	*			*		6	
Q 40. Do you perform asbestos work?											
Yes	*	*	*	*				*	*	6	
Q 41. Do you contract out asbestos work?											
Yes		*			*	*	*	*		5	
Q 42. Do you perform lead work?											
Yes	*	*	*	*				*	*	6	
Q 43. Do you contract out lead work?											
Yes		*			*	*		*		4	
Q 44. Do you have certification procedures for staging prior to use?											
Yes		*		*	*		*			4	

What type of temporary handrail do you use? (%)

Pipe	95.00	100.00	30.00	0.00	80.00	10.00	10.00	25.00	0.00		38.89
Wire rope	0.00	0.00	0.00	95.00	20.00	85.00	0.00	75.00	100.00		41.67
Chain	0.00	0.00	0.00	5.00	0.00	5.00	0.00	0.00	0.00		1.11
Wood	5.00	0.00	70.00	0.00	0.00	0.00	90.00	0.00	0.00		18.33

	YARD	1	2	4	5	7	9	10	11	12	TOTAL	AVE
Q 45.		Has a safety and health training budget been established?										
Yes		*				*	*	*	*		5	
		Is it specific to safety and health training?										
Yes		*				*	*	*	*		5	
		What is the budget (in 000s)										
										N.A.		
$0-$500						*		*			2	
$500-$1,000												
Over $1,000		*					*				2	
		Are OSH personnel responsible for developing the annual S&H training budget?										
Yes		*				*	*	*			4	
Q 46		What percentage of S&H training is performed:										
In-house		90	95	95	100	100	90	95	100	100		
Contractors		10	5	5	0	0	10	5	0	0		
Q 47.		Who receives the training?										
Upper mgmt.		*	*	*	*	*		*			6	
Middle mgmt.		*	*	*	*	*	*	*			7	
Supervisor		*	*	*	*	*	*	*	*		8	
Hourly		*	*	*	*	*	*	*	*	*	9	
Contractors			*	*	*			*	*	*	6	
Others				*	(Visitors & employee representatives)			* (Customers)	*		3	3
Q 48.		(See Attachment No. 1)										
Q 49.		Do you have a formal safety training program?										
Yes		*	*	*	*	*	*	*	*	*	9	
Q 50.		Do supervisors receive training in overseeing the safety of their work group?										
Yes		*	*	*	*	*	*	*	*		8	
Q 51.		Which of the following techniques of safety training do you employ?										
Lecture		7	5	6	2	5	7	3	3	4		4.67
Demonstration		3	1	3	1		5		1	3		2.43
Group Discussion		2	2	2	2	4	4		5			3.00
Literature/Manuals		8	6	8	3	3	3	4	6	5		5.11
Instruction/Supervisor		1	3	1	1	2	2	2	4	2		2.00
Instruction/Co-Worker		5	7	5	2		6	5				5.00
Instruction/Safety Staff		4	4	4	2	1	1	1	2	1		2.22
Other				(Videos)								
Q 52.		Safety training may be offered to employees one or more times. In this question, the term "initial safety training" referes to training offered before the worker begins a job or work task.										
		To whom is initial safety training made available? (a) All new employees (b) All new production employees (c) New employees in particularly dangerous jobs (d) Production employees reassigned to new jobs (e) Production employees using new machinery or whose work procedures have changed (f) Other (Specify)										
(a)		*	*	*	*		*	*	*	*	8	
(b)				*		*					2	
(c)		*		*	*	*	*				5	
(d)		*		*	*	*	*	*	*		7	
(e)		*		*		*	*	*	*		6	
(f)				*(1)	*(2)	*(1)		*(1&3)	*(1)		5	

(l)–Contractors & Visitors, (2)–Contractors, (3) Rehires & Recalls

YARD	1	2	4	5	7	9	10	11	12	TOTAL	AVE

Q 53. In this question, "continuing safety training" refers to training given to workers who have been performing the same job for some time.

Who receives continuing safety training? (a) All employees (b) Employees in jobs where accidents can occur (c) Employees in high accident risk jobs (d) Employees in jobs where accidents have occurred recently (e) Employees who have had accidents or near accidents recently (f) No continuing training is offered.

(a)	*	*	*	*	*	*	*	*		8	
(b)										0	
(c)										0	
(d)										0	
(e)										0	
(f)								*		1	

Q 54. How do you evaluate the effectiveness of your safety training program?

(See Attachment No. 1)

Q 55. In your training program do you make use of information on safety available from any of the following?

National Safety Council	3	2	1	3	1	4	4	2			2.50
Local Safety Council	4	5	4	2	2	7	5	3			4.00
Professional Associations	2	4	3	2		3	3	1			2.57
Trade Associations		3	5	3	3	6	6	5			4.43
Unions	5	6				5	8	6			6.00
Insurance Carrier						2	9	7	1		4.75
Governmental Agency	6	1	2	2		1	7	4	2		3.13
Other	1			2			6				3.00
	(International Loss Control Institute)		(Private Safety and health **literature**			(Purchased videos (1) and journals) (2)					

Q 56. In designing new work facilites or proposed renovations of existing installations, is there some mechanism for insuring that safety is considered in developing the design?

Eight yards answered in the affrmative; one in the negative.

Please explain.

Yard	
1	The Safety and Health staff reviews plans for new work facilities and proposed renovations.
2	Safety and Industrial Hygiene personnel are included in formal review cycle.
4	All plans and spec's. are reviewed by OSH dept. OSH office inspects facility prior to **acceptance.**
5	OSH office reviews plans and designs and submits appropriate recommendations.
9	A separate Facilities Engineering Group coordinates new and renovated projects with the Safety Staff for acceptance and/or modifications.
11	Engineering includes safety standards in design as required by code, regulation or law. OSH dept. also is consulted. as required.
12	Checked by Safety Director.

Q 57. Are design plans for new work facilites or proposed renovations of existing installations subject to the approval of safety personnel before construction starts?

Always	*		*				*				3
Often		*		*		*		*			4
Occasionally					*				*		2
Never											

Q 58. Are safety features included in the specifications for new equipment purchases?

Always			*			*	*				3
Often	*	*		*	*			*	*		6
Occasionally											
Never											

YARD	1	2	4	5	7	9	10	11	12	TOTAL	AVE
Q 59. Do Safety personnel have to approve newly installed equipment before it is used?											
Always					*					1	
Often		*	*	*		*	*	*		6	
Occasionally									*	1	
Never	*										
Q 60. Do Safety personnel have to approve new or modified work processes before they are put in operation?											
Always						*				1	
Often	*	*	*	*	*		*	*		7	
Occasionally									*	1	
Never											
Q 61. Who makes safety inspections pursuant to a formal procedure to insure safe working condhions?											
Top Management		*		*						2	
Production Management	*	*	*	*		*	*			6	
Safety Mgmt.		*		*	*	*	*	*	*	7	
Safety Staff	*	*	*	*	*	*	*	*	*	9	
Medical Staff											
Supervisors	*	*	*		*	*	*	*		7	
Union Rep's	*	*	*		*		*			5	
Worker(s)		*	*		*		*	*		5	
Other	*	(Industrial Hygienist)							* (Crane Operator)	2	
How often are ships inspected pursuant to that procedure?											
Daily					*	*	*	*	*	5	
Weekly	*	*		*						3	
Monthly											
Quarterly			*							1	
Semi-annually											
Annually											
How often are fabricating areas inspected?											
Daily						*				2	
Weekly				*	*				*	3	
Monthly							*			1	
Quarterly	*									1	
Semi-annually			*	(High risk areas)						1	
Annually		*	*							2	
How often are shops inspected?											
Daily						*		*		2	
Weekly				*					*	2	
Monthly					*		*			2	
Quarterly											
Semi-annually	*		*	(High risk areas)						2	
Annually		*	*							2	
How often are cranes inspected?											
Daily	*		*	*	*		*	*		6	
Weekly										0	
Monthly											
Quarterly											
Semi-annually											
Annually		*				*				2	
Do these inspections make use of a written checklist or written report?											
Always							*	*	(Cranes)	2	
Often			*	*	*	*				4	
Occasionally		*							*	2	
Never								*		1	

YARD	1	2	4	5	7	9	10	11	12	TOTAL	AVE
Q 62. Who makes housekeeping inspections pursuant to a formal procedure to insure safe housekeeping practices are followed?											
Plant Management		*				*	*			3	
Safety Management	*	*		*	*		*	*	*	7	
Medical Staff											
Supervisors	*	*	*	*			*	*	*	7	
Union Rep's	*	*			*		*			4	
Worker(s)			*							1	
Other	*	*	*					*		4	
	(Shop Mgmt.)							(Safety Engrs.)			
How often are ships inspected pursuant to that procedure?											
Daily	*		*				*	*	*	5	
weekly		*		*	*	*				4	
Monthly											
Quarterly											
Semi-annually											
Annually											
How often are fabricating areas inspected?											
Daily	*									2	
weekly			*	*		*	*		*	5	
Monthly					*					1	
Quarterly		*								1	
Semi-annually											
Annually											
How often are shops inspected?											
Daily	*			*				*		3	
Weekly			*			*	*		*	4	
Monthly											
Quarterly		*			*					2	
Semi-annually											
Annually											
Do these inspections make use of a written checklist or written report?											
Always		*				*	*			3	
Often			*							1	
Occasionally				*	*				*	3	
Never								*		1	
Q **64.** Who is responsible for developing and managing the Personal Protective Equipment budget?											
Human Resources											
Safety & Health									*	1	
Accounting											
Purchasing											
Production	*		*				*	*		4	
Other		*(1)		*(2)	*(3)	*(4)			*(5)	5	

1 Central Tool Shop.
2 Plant Engineering and Maintenance.
3 Facilities Dept.
4 Tool Control—under Maintenance and Production Support.
5 Storeroom Personnel.

YARD	A	B		D	E	F

Q 65. **Please check each of the following devices required to be used by personnel in your yard. NOTE: Give a percentage by each of the below items, of the initial and replacement cost paid by the worker (100% means the worker pays the entire cost; 0% means the yard pays the entire cost).**

	INITIAL					
Safety Shoes	100.00	100.00	100.00	70.00	100.00	100.00
Boots	100.00	0.00	100.00	0.00	100.00	0.00
Hard Hats	100.00	0.00	100.00	0.00	0.00	0.00
Leggings	100.00	0.00	100.00	0.00	0.00	100.00
Face Protectors	0.00	0.00	0.00	0.00	0.00	0.00
Eye Protectors	0.00	0.00	0.00	0.00	0.00	0.00
Protective Creams	0.00	0.00	0.00	0.00	0.00	0.00
Ear Protectors	0.00	0.00	0.00	0.00	0.00	0.00
Aprons	0.00	0.00	0.00	0.00	0.00	100.00
Respirators	0.00	0.00	0.00	0.00	0.00	0.00
Protective Suits	0.00	0.00	0.00	0.00	0.00	0.00
Flotation Devices	0.00	0.00	0.00	0.00	0.00	0.00
Life Lines	0.00	0.00	0.00	0.00	0.00	0.00
Gloves	0.00	0.00	95.00	0.00	100.00	50.00
Other (Specify)	0.00	0.00	100.00	0.00	0.00	0.00
Safety Glasses w/Side Shields	0.00	0.00	100.00	0.00	0.00	0.00
Metatarsals	100.00	0.00	0.00	0.00	0.00	0.00

	REPLACEMENT					
Safety Shoes	100.00	100.00	100.00	70.00	100.00	100.00
Boots	100.00	0.00	100.00	0.00	100.00	0.00
Hard Hats	100.00	0.00	100.00	0.00	0.00	0.00
Leggings	100.00	0.00	100.00	0.00	0.00	100.00
Face Protectors	0.00	0.00	0.00	0.00	0.00	0.00
Eye Protectors	0.00	0.00	0.00	0.00	0.00	0.00
Protective Creams	0.00	0.00	0.00	0.00	0.00	0.00
Ear Protectors	0.00	0.00	0.00	0.00	0.00	0.00
Aprons	0.00	0.00	0.00	0.00	0.00	100.00
Respirators	0.00	0.00	0.00	0.00	0.00	0.00
Protective Suits	0.00	0.00	0.00	0.00	0.00	0.00
Flotation devices	0.00	0.00	0.00	0.00	0.00	0.00
Life Lines	0.00	0.00	0.00	0.00	0.00	0.00
Gloves	100.00	0.00	95.00	100.00	100.00	80.00
Other (Specify)	0.00	0.00	100.00	0.00	0.00	0.00
Safety Glasses w/Side Shields	0.00	0.00	100.00	100.00	0.00	0.00
Metatarsals	100.00	0.00	0.00	0.00	0.00	0.00

Authors Note: Workers in Naval shipyards do not pay the cost of any of the P.P.E. required to be worn. Data pertaining to the Naval yards have been omitted here in the interest of preserving anonymity.

YARD	1	2	4	5	7	9	10	11	12	TOTAL	AVE

Q 65a. What restrictions are in effect with respect to the replacement of P.P.E. issued to workers at no cost to them?

Eight yards answered to the effect that there are no restrictions. One yard's policy requires that employees purchase hard hat, safety glasses and other safety equipment on date of hire. Replacement at company cost is the exception, not the rule. A store for the purchase of tools and safety equipment is readily available, on site.

Q 66. What is your annual personal protective equipment cost per employee?

$168.00	$200.00	$219.57	$430.00	$282.00	$83.00	$135.00	$ 2 1 6 . 8 0

YARD	1	2	4	5	7	9	10	11	12	TOTAL	AVE

Q 67. Which of the following do you use as incentives to worker safety? ("1" is the highest rating; "2" is next highest, etc.) (a) Safety attitude and behavior included in performance evaluation, (b)Running tally of accident free manhours, (c)Recognition awards, (d)Cash awards and prizes, (e)Publicity of outstanding safety performance.

a.	1	3	1	2	1	2	1	1			12
b.	5								2		7
c.	2	1	2	2			2	2	3		14
d.	3						3		1		7
e.	4	2	3	1		1		3			14

Q 68. what disciplinary actions are taken against workers who do not use required protective devices? ("l" is highest rating; "2" is next highest, etc.) (a)Verbal reprimand, (b)Written reprimand, (c)Fines, (d) ''Demerits which can be applied toward dismissal, (e) "Demerits which can hinder raises, (f) "Demerits leading to denial of rewards, (g)Reassignment to another job, (h) Other.

a.	3	1	1	2	3	3	2		3	18
b.	2	2	2	1	2	2	1		2	14
c.	1				1	1				3
d.	7								1	8
e.	5									5
f.	6									6
g.	4									4
Other			3 Time off	1 Termin.			3 Termin.	Varies		7

Q 69. What disciplinary actions are imposed against workers who habitually fail to follow safe work practices? ("1" is the highest rating; "2" is next highest, etc.) (a)Verbal reprimand, (b)Written reprimand, (c)Transfer to another job, (d)Fines, (c)Mandatory participation in special, safety training, (f) suspension, (g)Dismissal, (b) Other.

a.	5	5	1	3		3	2		3	22
b.	4	3	2	2	3	2	1		2	19
c.	6									6
d.	2									2
e.	7	4		3						14
f.	3	2	3	2	2	1	2		1	16
g.	1	1		1	1	1	1		1	7
h.			4							4
Other			Time off					Varies		

Q 70. Is there a formal procedure established for workers to report suspected safety and health hazards?

	*	*	*	*	*	*	*		*	8

In general, how does the worker report safety and health hazards? By telling. . .

In Writing	*	*	*	*						4
Supervisor	*	*	*	*	*	*	*	*	*	9
Maintenance						*				1
Safety	*	*	*	*	*	*	*	*	*	9
Other		*—1		*—2	*—3	*—4				4

1. Special Telephone Numbers
2. Employee "Hot line"
3. Union Safety Man
4. Union

Q 71. Other than those required, does your yard use an additional accident recording form?

Yes	*	*	*		*	*	*	*	*	8

Q 72. This form is unique to your. . .

Company		*			*	*	*	*	*	6
Yard	*		*		*		*			4

YARD	1	2	4	5	7	9	10	11	12	TOTAL	AVE
Q 73.	**This form gathers information on:**										
Major injuries	*	*	*		*	*	*	*	*	8	
Minor injuries			*		*	*	*	*		5	
Near accidents		*				*		*		3	
Q 74.	**How often are accidents resulting in lost time investigated pursuant to a formal procedure?**										
Always	*	*	*	*	*	*	*	*	*	9	
Often											
Occasionally											
Never											
	If investigated, is a written report made?										
Yes	*	*	*	*	*	*	*	*	*	9	
Q 77.	**Who conducts the lost time accident investigation?**										
Top Management										0	
Production Management					*		*			2	
Safety Management					*	*	*		*	4	
Safety staff				*			*	*		3	
Medical Staff											
Supervisors	*	*	*	*			*	*		6	
Union Rep's.											
Worker(s)											
Other											
	Who participates in the lost time accident investigation?										
Top Management						*	*			2	
Production Management		*		*		*		*	*	5	
Safety Management		*			*	*		*		4	
Safety Staff		*	*	*		*			*	5	
Medical Staff		*	*		*	*	*			5	
Supervisors		*		*	*	*	*			5	
Union Rep's.					*		*			2	
Worker(s)		*						*		2	
Other											
Q 78.	**If an investigation is made of a lost time accident or an accident requiring medical treatment how soon after the incident does the investigation usually take place? Within —**										
One day				*	*	*		*	*	5	
Three days		*					*			2	
One week	*									1	
Two weeks			*							1	
One month											
> one month											
Q 75.	**How often are accidents resulting in minor injuries investigated pursuant to a formal procedure?**										
Always	*				*	*		*		4	
Often		*	*				*			3	
Occasionally				*					*	2	
Never											
	If investigated, is a written report made?										
Yes	*	*	*			*	*	*	*	7	

YARD	1	2	4	5	7	9	10	11	12	TOTAL	AVE
Q 77.	**Who conducts the minor injury accident investigation?**										
Top Management											
Production Management							*			1	
Safety Management						*	*		*	3	
Safety Staff					*		*	*		3	
Medical Staff											
Supervisors	*	*	*	*			*	*		6	
Union Rep's.											
Worker(s)											
Other											
	Who participates in the minor injury accident investigation?										
Top Management							*			1	
Production Management		*				*		*	*	4	
Safety Management						*		*		2	
Safety Staff			*	*		*			*	4	
Medical Staff						*	*			2	
Supervisors		*		*		*				3	
Union Rep's.					*		*			2	
Worker(s)	*	*					*	*		4	
Other											
Q 79.	**If an investigation is made of a minor injury which does not involve lost time or require medical treatment how soon after the incident does an investigation usually take place? Within —**										
One day						*		*		2	
Three days		*			*				*	3	
One week				*			*			3	
Two weeks	*		*							2	
One month											
> One month											
Q 76.	**How often are narrow escapes from accidents investigated pursuant to a formal procedure?**										
Always						*		*		2	
Often				*			*		*	3	
Occasionally	*	*	*		*					4	
Never											
	If investigated, is a written report made?										
Yes	*	*		*	*	*	*	*	*	8	

YARD	1	2	4	5	7	9	10	11	12	TOTAL	AVE
Q 77.	**Who conducts the narrow escape investigation?**										
Top Management										0	
Production Management							*			1	
Safety Management				*		*	*		*	4	
Safety Staff				*			*	*		3	
Medical Staff											
Supervisors	*	*	*	*	*		*	*		7	
Union Rep's.											
Worker(s)											
Other											
	Who participates in the narrow escape investigation?										
Top Management				*			*			2	
Production Management		*		*		*		*	*	5	
Safety Management		*		*		*		*		4	
Safety Staff		*		*		*			*	4	
Medical Staff		*				*	*			3	
Supervisors		*	*	*		*				4	
Union Rep's.					*		*			2	
Worker(s)	*	*					*	*		4	
Other											
Q 80.	**If an investigation is made of a narrow escape, how soon after the incident does the investigation usually take place? Within —**										
One day				*		*	*	*	*	5	
Three days	*	*								2	
One week					*					1	
Two weeks			*							1	
One month											
> One month											
Q 81.	**Are the results of any of the above-described accident investigations publicized within the year?**										
Yes	*	*	*	*	*		*	*		7	
	What kinds are publicized?										
Yard 2	Necessary corrective actions are publicized in a manner to reach the target audience through monthly standup safety talk topics or through the house organ.										
Yard 4	Lesson learned type; those incidents that would be of benefit to others.										
Yard 5	Those of significant impact to large numbers of employees.										
Yard 7	Minutes of CEO's Accident Investigation Committee are furnished to the union officials.										
Yard 10	Monthly Accident Experience Report to Supervision; Safetygrams.										
Yard 11	Any investigation which results in changes made to yard policies and procedures. Selected investigations are publicized for educational purposes.										

YARD	1	2	4	5	7	9	10	11	12	TOTAL	AVE
Q 82.	**Who reviews the results of an investigation of a lost time accident pursuant to a formal procedure?**										
Upper Management	*	*	*				*			4	
Middle Management	*	*	*	*	*	*	*	*	*	9	
Medical					*	*	*			3	
Union			*				*			2	
Clerical						*				1	
Supervisor	*	*	*	*	*	*	*			7	
Workers		*		*		*				3	
Safety	*	*	*				*			4	
	Who reviews the results of an investigation of a minor accident pursuant to a formal procedure?										
Upper Management											
Middle Management	*	*	*		*				*	5	
Medical						*	*			2	
Union							*			1	
Clerical						*				1	
Supervisor	*	*	*	*	*	*	*			7	
Workers		*								1	
Safety	*	*	*			*	*			5	
	Who reviews the results of an investigation of a narrow escape pursuant to a formal procedure?										
Upper Management							*			1	
Middle Management	*	*	*		*	*	*		*	7	
Medical						*	*			2	
Union							*			1	
Clerical						*				1	
Supervisor	*	*		*	*	*	*			6	
Workers		*		*						2	
Safety	*	*				*	*			4	
Q 83.	**Are accident statistics used as an index of when to make changes in your safety program?**										
Yes	*	*	*	*	*	*	*	*	*	9	
Q 84.	**Does your yard try to obtain accident experience data from other organizations using similar industrial processes?**										
Yes	*	*	*	*	*	*	*	*	*	9	
	Do you use this information as an indicator of the effectiveness of your safety program?										
Yes	*	*	*	*		*	*	*	*	8	

Q 85. **If there is any other program, process, procedure or form, not already referred to in this document, which you use on a regular basis because it makes a significant contribution to your safety efforts please provide a description of it and of its efficacy.**

(See Attachment No. 1)

APPENDIX 1

Responses to Q.48, Q.54 and Q.85

Q. 48. How is Top Management's (highest level at the yard) commitment to safety demonstrated?

Yard 1

- Issued a policy statement in safety and health
- Has top safety and health manager reporting directly to him
- Chairs the OSH Policy Committee
- Includes safety in agenda of regular meetings
- Includes safety in business plan
- Requires safety objectives in top managers' performance appraisal
- Personally reviews accident investigation reports of lost time injuries
- Personally reviews serious injuries with line managers
- Personally presents OSH performance awards
- Personally reviews frequency trend line by shop each month

Yard 2

- Policy statement
- Discussion at meetings
- Prominent display of safety statistics
- Articles in yard newspaper
- Correspondence to managers and employees
- Personal field inspections by top managers.

Yard 4

- Chairs the OSH Policy Committee
- Supports the OSH program not only in words but also in action
- Personally presents OSH performance awards

Yard 5

- Allocation of resources to the OSH program
- Administration and enforcement of OSH rules and regulations
- Participation in OSH program

Yard 7

- Chairs meeting convened monthly specifically for discussion of safety matters
- Stand up safety meetings
- Notices, posters, billboard messages, etc.

Yard 9

- Included a letter in the Safety Manual to all employees
- Included a letter to all supervision in their personal supervisor safety manual
- Chairs Quarterly Safety and Health Committee meetings

Yard 10

- Fully supports the Safety Program and backs Safety Department staff decisions.
- Participates fully in Central Safety Committee and Production Safety Committee.
- Incentive Programs
- Frequent tours of the yard, the shops and the ships

Yard 11

- By active involvement and by policy

Yard 12

- By constant daily involvement

Q. 54. How do you evaluate the effectiveness of your safety training programs? Please be as specific as practicable.

Yard 1

The presentation of the Yards' safety training is excellent. However, only 30% of the production workers are receiving continuing safety training. Therefore, the effectiveness of the Yards' safety training is thirty percent.

Yard 2

Tests, demonstrations, mock-ups, drills, critiques of mishaps, audits of compliance.

Yard 4

After formal training the employee completes an evaluation form. This form is reviewed for ways to improve the training. When a safety procedure is frequently not followed by a variety of employees or a requirement not adhered to, it is assumed that training has not been adequate and these issues are reiterated. Safety reviews all safety and health training and non routinely audits courses.

Yard 5

- Employee feedback
- Accident investigation results
- Accident statistical review

Yard 7

- Observation
- Variance analysis of results

Yard 9

We monitor Frequency and Severity of individual departments and supervisors. We have computerized all accidents to evaluate which ones are most frequent, as well as which one's cost the most. We began here to train and educate supervisors and management relative to the facts, develop methods to resolve unsafe acts and conditions that are good for the employee and the company.

Yard 10

- Evaluation of incidence and severity rates.
- Observed attitudes.

Yard 11

- Demonstrated competence in specific tasks
- Comparisons of accident rates for work crew before and after training

Yard 12

By changes in category and types of injuries

Q. 85. If there is any other program, process, procedure or form, not already referred to in this document, which you use on a regular basis because it makes a significant contribution to your safety efforts please provide a description of it and of its efficacy.

- The Shipyard has initiated a flex and stretch program in two Shops during the last 12 months which has reduced injuries by 90%. At the beginning of each shift the employees gather for eight minutes to flex and stretch their muscles. The program has reportedly, improved moral and on the job performance.
- We use a computerized program of accident trend analysis for determining where injuries are occurring and pinpointing areas for increased program emphasis which we believe to be noteworthy. All reported employee injuries (including first aid) are tracked by computer as to location, nature and type of injury and type of accident as well as by individual employee, time of day, day of week, shift assignment, experience level, sex, and trade as well as other items including first and second level supervisor. Computer analysis capabilities allow us to pinpoint areas for program improvements such as housekeeping emphasis, supervisory training or performance enhancement, employee counselling, engineering controls, PPE emphasis, etc. We believe that this program is unique in its application and an invaluable tool in OSH program management.
- Monthly reports with injury analysis; semi-annual supervisor reports which show number of mishaps by supervisors; quarterly employee reports showing employees with 3 or more mishaps during the last 12 months; monthly, quarterly, annual injury statistics which show shop and code efforts to meet/beat their injury reduction goal. We have a special emphasis program awarding a prize to the winner of the injury reduction effort which is presented by top management.
- (JSA) Job Safety Analysis
- JOB SAFE PRACTICE SHEETS — List of brief steps to follow in unique type jobs
- MANUFACTURING STANDARD PROCESS — List all steps, equipment, manufacturing, seq, more detailed.
- SUPERVISOR'S SAFETY BRIEFING — List safety do & don't communicates with supervisor and worker
- NEW EMPLOYEE SAFETY ORIENTATION — Slide presentation of general rules, hazard communication, hearing program, respirator program, handbook issued to each
- MANUAL OF SAFETY REGULATIONS — Covers major safety rules
- SUPERVISOR'S SAFETY MANUAL — Safety book explains safety program, procedures, discipline, etc.

- Incentive programs and awareness programs.
- Extensive statistical reports are disseminated to individual departments comparing accident data vs. previous years for use in trend anrdysis and safety program development and evaluation
- Attendance records are reviewed regularly to determine patterns of absenteeism from work, which is one of the most important ways to discover accident prone employees before it is too late.

APPENDIX 2
Safety Training Programs

SAFETY TRAINING PROGRAMS — YARD 01

PROGRAM TITLE	Trade or Craft	Pct.	Duration	Frequency	Yes	Attend	Test	Yes	Mandated	By
Ammo Handlers Safety Training	Crane Ops.	5	4 hours	Annually	y		y		y	U.S. Navy
	Riggers	5	4 hours	Annually	y		y		y	U.S. Navy
Asbestos - Fixed Asbestos Controls	Auto/Crane Repair	1	1.5 hours	Once	y	y				
	Gasket Makers	100	1.5 hours	Once	y	y				
	Outside Machinist	100	1.5 hours	Once	y	y				
	Pipefitters	100	1.5 hours	Once	y	y				
Asbestos - Limited Asbestos Worker	Various	100	2 hours	Annually	y		y			
Asbestos/Fibrous Glass Exposure	Electronics	5	4 hours	Once	y		y			
	Insulators	100	4 hours	Once	y		y			
	Maintenance	5	4 hours	Once	y		y			
	Temp Services	10	4 hours	Once	y		y			
CPR	Electricians	100	8 hours	Annually	y		y			
Electrical Safety	Electrician	100	8 hours	Biennially	y		y			
Electrical Safety - (B - Non-shipboard)	Electricians	100	4 hours	Biennially	y		y			
Fibrous Glass Control - Shop	Electronics	5	2 hours	Once	y		y			
	Insulators	100	2 hours	Once	y		y			
	Maintenance	5	2 hours	Once	y		y			
	Service	5	2 hours	Once	y		y			
	Sheetmetal	2	2 hours	Once	y		y			
Forklift Safety/Operating Instructions	As Applicable		4 hours	Once	y		y			
Gas Free Tester Training (Refresher)	Gas Test	100	8 hours	Annually	y		y	y		
Gas Free Tester Training (Initial)	Gas Test	100	80 hours	Once	y		y			
Halocarbon-Freon Safety Program	All	100	20 minutes	Once						
Hazard Communications (Right to Know)	All	75	4 hours	Once	y					
Hazard Communications - (Right to Know)	All	75	4 hours	Once						
Hazardous Material	All	50	6 hours	Annually			y	y		
Hearing Conservation	Various	60	20 minutes	Annually					y	OSHA
Initial OSH Training for Supervisors	New Supers.	100	4 hours					y		
Initial OSH Training for Apprentices	Various	100	6 hours	Once	y	y				
Laser Safety Training	Maintenance	1	16 hours	As needed	y	y		y		
	Shipwrights	3	15 hours	As needed	y	y		y		
Lead Worker Training	Blasters	100	2 hours	Annually	y		y		y	OSHA
	Painters	100	2 hours	Annually	y		y		y	OSHA
	Riggers	3	2 hours	Annually	y		y		y	OSHA
	Shipfitters	100	2 hours	Annually	y		y		y	OSHA
	Shipwrights	30	2 hours	Annually	y		y		y	OSHA
	Welders	100	2 hours	Annually	y		y		y	OSHA
Motor Driven Aerial Device Study	Electronics	5	3 hours	Once	y		y			
	Maintenance	5	3 hours	Once	y		y			
	Pipefitters	5	3 hours	Once	y		y			
	Riggers	5	3 hours	Once	y		y			

SAFETY TRAINING PROGRAMS — YARD 01

PROGRAM TITLE	Trade or Craft	Pct.	Duration	Frequency	Yes	Attend	Test	Yes	Mandated	By
New Employee Safety Orientation	All	100	30 minutes	Once						
OSH Refresher Training for Supervisors	All Supers.	100	1 hour	Annually						
Pendant Controlled Bridge Crane Safety	Machinists	10	8 hours	Once	y		y			
	Painters	2	8 hours	Once	y		y			
	Shipfitters	2	8 hours	Once	y		y			
	Transportation	100	8 hours	Once	y		y			
	Welders	2	8 hours	Once	y		y			
Respirator Training and Face Fit	Painters	100	1 hour	Bi-annually	y		y		y	OSHA
Respirator Training	Painters	100	4 hours	Annually	y		y	y	y	OSHA
Respirator Training and Face Fit	Riggers	50	1 hour	Bi-annually	y		y		y	OSHA
Respirator Training	Riggers	50	4 hours	Annually	y		y	y	y	OSHA
	Service	50	4 hours	Annually	y		y	y	y	OSHA
Respirator Training and Face Fit	Services	50	1 hour	Bi-annually	y		y		y	OSHA
	Shipfitters	100	1 hour	Bi-annually	y		y		y	OSHA
Respirator Training	Shipfitters	100	4 hours	Annually	y		y	y	y	OSHA
Respirator Training and Face Fit	Wood Shop	50	1 hour	Bi-annually	y		y		y	OSHA
Safe Crane Operating Procedures - Refresher	Operators	100	8 hours	Annually	y		y			
	Riggers	100	8 hours	Annually	y		y			
Safe Rigging Practices - (Initial)	Crane Ops.	100	8 hours	Once	y			y		
	Riggers	100	8 hours	Once				y		
	Shipfitters	3	8 hours	Once	y		y	y		
Ship Safety Indoctrination for Supervisors	Shipboard Supers.	100	4 hours	Annually	y		y			
Ship Safety Indoctrination	Shipboard Workers	100	4 hours	Annually	y		y			

SAFETY TRAINING PROGRAMS — YARD 02

PROGRAM TITLE	Trade or Craft	Pct.	Duration	Frequency	Yes	Attend	Test	Yes	Mandated	By
Abrasive Blasting	Blasters	100	Variable	As Needed	y	y			y	OSHA
	Painters	5	Variable	As Needed	y	y			y	OSHA
Accident Investigation	All Supervisors	20	30 minutes	As needed	y		y	y		
Acids and Alkalies	Electricians	10	Variable	As needed	y		y		y	OSHA
	Electronics Mechanics	10	Variable	As needed	y		y		y	OSHA
Adhesives, Sealants and Cement	Boatbuilders	5	Variable	As needed	y		y		y	OSHA
	Carpenters	5	Variable	As needed	y		y		y	OSHA
	Shipwrights	5	Variable	As needed	y		y		y	OSHA
Asbestos Program	Boilermakers	21	4 hours	Bi-annually	y		y	y	y	OSHA
	Carpenters	35	4 hours	Bi-annually	y		y	y	y	OSHA
	Electricians	1	4 hours	Bi-annually	y		y	y	y	OSHA
	Insulators	99	4 hours	Bi-annually	y		y	y	y	OSHA
	OSH Office	30	4 hours	Bi-annually	y		y	y	y	OSHA
	Pipefitters	1	4 hours	Bi-annually	y		y	y	y	OSHA
	Plant Maintenance	25	4 hours	Bi-annually	y		y	y	y	OSHA
	Riggers	5	4 hours	Bi-annually	y		y	y	y	OSHA
	Tool Room	2	4 hours	Bi-annually	y		y	y	y	OSHA
Asbestos Worker - Limited	Boilermaker	13	2 hours	Annually	y		y	y		
	Inside Machinist	23	2 hours	Annually	y		y	y		
	Outside Machinist	26	2 hours	Annually	y		y	y		
	Pipefitter	1	2 hours	Annually	y		y	y		
Asbestos Worker	Sheetmetal	10	2 hours	Annually	y		y	y		
Asbestos Worker - Limited	Welder	12	2 hours	Annually	y		y	y		
Back Program	All	5	2 hours	As needed	y	y				
Brazing	AC & Refrig. Mechanic	10	1 hour	As needed	y		y		y	OSHA
	Pipefitter	10	1 hour	As needed	y		y		y	OSHA
Confined Space Entry	Gas Monitors	100	4 weeks	Annually	y		y	y	y	OSHA
Crane Safety Program	Crane Operators	100	Variable	As needed	y		y	y		
	Machinists	5	Variable	As needed	y		y	y		
	Pipefitters	5	Variable	As needed	y		y	y		
	Riggers	5	Variable	As needed	y		y	y		
	Sandblasters	5	Variable	As needed	y		y	y		
Electrical Safety	Electricians	100	4 hours	Every 2 years	y	y		y		
	Electronic Mechanic	100	4 hours	Every 2 years	y	y		y		
Eye Safety	All	100	Variable	As needed	y	y				
Fire Safety (Fire Watch)	All Production	15	4 hours	Weekly	y		y			
Foreman's Prepartory	New Supervisors	30	2 hours	As needed	y		y	y		
Grinder Awareness	Machinist	20	Variable	As needed	y	y				
Grinding, Boring and Drilling	Machinist	10	Variable	As needed	y		y			
Halocarbon Freon Safety Program	AC & Refrig. Mechanic	100	30 minutes	As needed	y	y			y	OSHA
	Pipefitters	25	30 minutes	As needed	y	y			y	OSHA
Hand Safety	All	25	Variable	As needed	y	y				
Hazard Communications	All	100	15 minutes	As needed	y	y			y	OSHA
Hearing Conservation	All	100	Variable	As needed	y	y		y	y	OSHA
Industrial Air Tool Program	All	100	Variable	As needed	y		y			
Inert Gases	Welders	60	Variable	As needed	y		y	y	y	OSHA
Ladder Safety	Boatbuilders	5			y		y			
	Carpenters	5			y		y			
	Shipwrights	5			y		y			

SAFETY TRAINING PROGRAMS — YARD 02

PROGRAM TITLE	Trade or Craft	Pct.	Duration	Frequency	Yes	Attend	Test	Yes	Mandated	By
Lead Program	Blasters	50	Variable	Annually	y		y	y	y	OSHA
	Elec. Plater	25	Variable	Annually	y		y	y	y	OSHA
	Foundryman	10	Variable	Annually	y		y	y	y	OSHA
	Guards	1	Variable	Annually	y		y	y	y	OSHA
	Painters	75	Variable	Annually	y		y	y	y	OSHA
	Pipefitters	5	Variable	Annually	y		y	y	y	OSHA
	Plant Maint.	45	Variable	Annually	y		y	y	y	OSHA
	Riggers	25	Variable	Annually	y		y	y	y	OSHA
	Shipfitters	45	Variable	Annually	y		y	y	y	OSHA
	Welders	30	Variable	Annually	y		y	y	y	OSHA
Living Safely with Chemical Hazards	All	100	Variable	As needed	y	y			y	OSHA
Metal Working Fluids	Machinist	10	Variable	As needed	y		y		y	OSHA
Painter Safety Program	Painter	100	Variable	As needed	y	y		y	y	OSHA
Paints and Coatings	Painters	80	Variable	As needed	y	y		y	y	OSHA
Personal Protective Equipment	All	100	Variable	As needed	y	y				
Respirator Training	All		4 - 6 hours	Every 2 years	y		y	y	y	OSHA
Sanitation Chemicals (CNT) Tank Cleaning	Riggers	100	4 hours	As required	y		y	y	y	OSHA
Slip, Trips and Falls	All	100	Variable	As needed						
Soldering	Electricians	25	2 hours	Every 2 years	y		y	y	y	OSHA
		25	2 hours	Every 2 years	y		y	y	y	OSHA
	Electronic Mechanic	25	2 hours	Every 2 years	y		y	y	y	OSHA
Solvents and Solvent Solutions	Boilermakers	75	Variable	As needed	y		y	y	y	OSHA
		75	Variable	As needed	y		y	y	y	OSHA
	Machinists	75	Variable	As needed	y		y	y	y	OSHA
Stage Building and Maintenance	Shipwrights	5	Variable	As needed	y		y			
Supervisory Update Program	Production Supervisors	100	15 minutes	Monthly						
Torch Cutting	Shipfitters	45	45 minutes	As needed	y		y	y		
	Welders	30	45 minutes	As needed	y		y	y		
Vibratory White Finger Syndrome	Boilermakers	33	2 hours	As needed	y		y			
Welding and Carbon-arc Gouging	Welders	20	Variable	As needed	y		y	y		
Woodworking Safety	Boat Builders	100	Variable	As needed	y	y		y		
	Carpenters	100	Variable	As needed	y	y		y		
	Shipwrights	100	Variable	As needed	y	y		y		

SAFETY TRAINING PROGRAMS — YARD 04

PROGRAM TITLE	Trade or Craft	Pct.	Duration	Frequency	Yes	Attend	Test	Yes	Mandated	By
Accident Investigation	Safety	100	64 hours	Once		y		y		
Asbestos (Fixed) Material Handling & Removal	Machinists		2 hours	Once	y	y		y (1hr/ann.)	y	OSHA
	Maintenance		2 hours	Once	y	y		y (1hr/ann.)	y	OSHA
	Pipefitters		2 hours	Once	y	y		y (1hr/ann.)	y	OSHA
	Sheetmetal		2 hours	Once	y	y		y (1hr/ann.)	y	OSHA
	Shipfitters		2 hours	Once	y	y		y (1hr/ann.)	y	OSHA
Asbestos Control/Isolated Entry			2 hours	Once		y				OSHA
Asbestos Handling & Removal	Various		6 hours	Once	y	y		y	y	OSHA
Back Injury Prevention	All on request		1 hour	Once		y				
Beryllium Alloys	Machinists		1 hour	Once		y			y	OSHA
Cadmium/Cadmium-coated Material	Pipefitters		1 hour	Once		y			y	OSHA
	Welders		1 hour	Once		y			y	OSHA
CPR	Electricians		4 hours	Annually	y		y	y		
	Electronics		4 hours	Annually	y		y	y		
	Fire Dept.		4 hours	Annually	y		y	y		
	Guards		4 hours	Annually	y		y	y		
	Maintenance		4 hours	Annually	y		y	y		
Crane Safety	Maintenance		40 hours	As required						
Freon Safety	Electricians		1 hour	Once						
	Machinists		1 hour	Once						
	Maintenance		1 hour	Once						
	Painters		1 hour	Once						
	Pipefitters		1 hour	Once						
	Welders		1 hour	Once						
Gas Free Engineering (Maritime Operations)	Maintenance		80 hours	Once	y		y	y	y	OSHA
	Safety		80 hours	Once	y		y	y	y	OSHA
	Shipfitters		80 hours	Once	y		y	y	y	OSHA
Hazard Communication	All		1 hour	Once					y	OSHA
Hazard Material (orientation/awareness)	All on request		3 hour	Once					y	OSHA
Hazard Material (spills and transfer)	Fire Dept.		3 hours	Once					y	OSHA
	Maint. Spill Team		3 hours	Once					y	OSHA
Hazard Material (handling and storage)	Supply		3 hours	Once					y	OSHA
Hazard Material (spills and transfer)	Transportation		3 hours	Once					y	OSHA
Hazard Material (handling and storage)	Various		3 hours	Once					y	OSHA
Hazard Material (handlers and processers)	Various		1 hour	Once					y	OSHA
Hazard Waste Handlers	Various		4 hours	Once					y	OSHA
Hearing Conservation Training	All		1 hour	Annually				y	y	OSHA
Hydraulic Fluid (safe use and handling)	Machinists		1 hour	Once						
	Pipefitters		1 hour	Once						
	Riggers		1 hour	Once						
Hydrogen Monitoring Principles and Procedures	Various		1 hour	Once	y		y	y		

SAFETY TRAINING PROGRAMS — YARD 04

PROGRAM TITLE	Trade or Craft	Pct.	Duration	Frequency	Yes	Attend	Test	Yes	Mandated	By
Hyperbaric Atmosphere Training	Electricians		1 hour	Once						
Lead Workers Training	Electricians		1 hour	Annually				y	y	OSHA
	Foundrymen		1 hour	Annually				y	y	OSHA
	Machinists		1 hour	Annually				y	y	OSHA
	Painters		1 hour	Annually				y	y	OSHA
	Pipefitters		1 hour	Annually				y	y	OSHA
	Shipfitters		1 hour	Annually				y	y	OSHA
			1 hour	Annually				y	y	OSHA
	Welders		1 hour	Annually				y	y	OSHA
			1 hour	Annually				y	y	OSHA
OSH Committee Training	Committee Reps.		2 hours	Once						
OSH Development Training for Supervisors	All Supers		3 hours	Once						
OSH Orientation (new employees)	All		2 hours	Once						
OSH Orientation; Plant Protection	Various		1 hour	Once						
PCB (Polychlorinated Biphenals) Handling	Electricians		3 hours	As needed						
	Electronics		3 hours	As needed						
	Machinists		3 hours	As needed						
	Various Other		3 hours	As needed						
Respirator Training	All		2 hours	Twice a year	y		y	y	y	OSHA
Vapor Degreaser Operator	Electricians		1 hour	Triennially	y		y	y		
	Machinists		1 hour	Triennially	y		y	y		
	Painters		1 hour	Triennially	y		y	y		

SAFETY TRAINING PROGRAMS — YARD 05

PROGRAM TITLE	Trade or Craft	Pct.	Duration	Frequency	Yes	Attend	Test	Yes	Mandated	By
Asbestos	Insulators	100	2 hours	Annually	y	y		y	y	OSHA
Compressed Gases	Pipefitters	100	30 minutes	Annually	y	y		y		
	Shipfitters	100	30 minutes	Annually	y	y		y		
	Tackers	100	30 minutes	Annually	y	y		y		
	Welders	100	30 minutes	Annually	y	y		y		
Crane and Condor-lift Safety	Crane Ops	100	160 hours	Bi-annual	y		y	y	y	OSHA
	Hookers	100	160 hours	Bi-annual	y			y		
Eye Safety	All	100	30 minutes	Annually	y	y		y		
Foreman's Preparatory	All Supers.	100	16 hours	Bi-annually	y	y		y		
Foundry Toxic Substances	All Foundry	100	30 minutes	Monthly	y	y		y		
Hazard Communication	All	100		Annually	y	y		y	y	OSHA
Hearing Conservation	All Production	70	1 hour	Annually	y	y		y	y	OSHA
Ladder Safety	All	100	30 minutes	Bi-annually	y	y		y		
Lead	Fitter/Burner	10	2 hour	Annually	y	y		y	y	OSHA
	Fitter/Tacker	10	2 hour	Annually	y	y		y	y	OSHA
	Painter/Blaster	30	2 hour	Annually	y	y		y	y	OSHA
Paints and Coatings	Painters	100	1 hour	Annually	y	y		y		
Respirator Training/Fit Testing	All Prod.	100	1.5 hours	Annually	y	y		y		
Soldering and Brazing	Maintenance	10	30 minutes	Annually	y	y		y		
	Pipefitters	60	30 minutes	Annually	y	y		y		
	Welders	20	30 minutes	Annually	y	y		y		
Stage Building and Maintenance	Stagebuilder	100	160 hours	Bi-annual	y	y		y		
Welding and Carbon-arc Gouging	Tackers	100	30 minutes	Twice a year	y	y		y		
	Welder	100	30 minutes	Bi-monthly	y	y		y		
Woodworking Safety	Carpenters	100	30 minutes	Bi-monthly	y	y		y		

SAFETY TRAINING PROGRAMS — YARD 09

PROGRAM TITLE	Trade or Craft	Pct.	Duration	Frequency	Yes	Attend	Test	Yes	Mandated	By
Accident Investigation - Super. Safety Manual	All Supers	100	15 minutes	Once		y		y		
	Safety/Fire	100	1 hour	As required		y		y		
Acid Flushes - JSP Instructions	Chem Lab	100	30 minutes	As required		y		y		
	Electrical	25	30 minutes	As Required		y		y		
	Machinery	25	30 minutes	As Required		y		y		
	Painters	25	30 minutes	As required		y		y		
	Pipe	25	30 minutes	As Required		y		y		
	Safety	100	30 minutes	As Required		y		y		
Ammo Handling Training	Carpenters	5	16 hours	Annually	y	y		y	y	U.S.Navy
	Crane Operator	10	16 hours	Annually	y	y		y	y	U.S.Navy
	Materiel	1	16 hours	Annually	y	y		y	y	U.S.Navy
	Riggers	5	16 hours	Annually	y	y		y	y	U.S.Navy
	Safety/Fire	10	16 hours	Annually	y	y		y	y	U.S.Navy
	Transportation	5	16 hours	Annually	y	y		y	y	U.S.Navy
Asbestos Program - Standard Procedure	hem Lab	75	4 hours	As required		y		y	y	OSHA
	Safety	25	8 hours	As required		y		y	y	OSHA
C. P. R. Training	Safety	80	8 hours	Annually	y		y	y		
Commercial Drivers License Training	Drivers	100	3 hours	Once		y			y	State La
Compressed Gases - Supervisor Safety Briefing	All	100	15 minutes	Annually		y		y		
Confined Space Entry - Super. Safety Briefing	All	100	15 minutes	Twice a year		y		y	y	OSHA
Confined Space Entry - JSP Instruction	Carpenters	10	15 minutes	As Required		y		y		
Confined Space Entry	Chem Lab	100	16 hours	Once	y		y			
Confined Space Entry - JSP Instruction	Electrical	10	15 minutes	As Required		y		y		
Confined Space Entry	Fire	25	16 hours	Once	y		y			
Confined Space Entry - JSP Instruction	Hull Crafts	10	15 minutes	As Required		y		y		
	Machinery	10	15 minutes	As Required		y		y		
	Painters	10	15 minutes	As Required		y		y		
	Pipe	10	15 minutes	As Required		y		y		
Confined Space Entry	Safety	100	16 hours	Once	y		y			
Crane Inspection Training	Safety	10	24 hours	Annually	y	y		y		
CRY-O-Fit Training	Pipefitters	37	.5 hours	Once	y		y			
Fire Safety - JSP Instructions	All	100	30 minutes	Semi-annually		y		y		
Fire Safety - Manufacturing Standard Process	All	100	30 minutes	Semi-annually		y		y		
Fire Safety - Orientation	All	100	30 minutes	Semi-annually		y		y		
Fire Safety - Standard Procedures	All	100	30 minutes	Semi-annually		y		y		
Fire Safety - Supervisor Safety Briefings	All	100	30 minutes	Semi-annually		y		y		
Fire Safety - Work Practice Sheets	All	100	30 minutes	Semi-annually		y		y		
Firewatch Training	Electrical	5	2 hours	Annually	y	y		y	y	OSHA &
	Hull Crafts	10	2 hours	Annually	y	y		y	y	OSHA &
	Joiners	5	2 hours	Annually	y	y		y	y	OSHA &
	Machinery	5	2 hours	Annually	y	y		y	y	OSHA &
	Painters	25	2 hours	Annually	y	y		y	y	OSHA &
	Pipe	10	2 hours	Annually	y	y		y	y	OSHA &
	Sheetmetal	5	2 hours	Annually	y	y		y	y	OSHA &
First Responder Training	Fire	80	40 hours	Once	y		y	y		
	Safety	75	40 hours	Once	y		y	y		
Flame Spray Training	Painters	10	1 hour	Once	y		y			
Freon Safety	Electrical	25	30 minutes	As Required		y		y		
	Machinery	25	30 minutes	As Required		y		y		
	Pipe	25	30 minutes	As Required		y		y		
Fuels, Lubricants, Oils - JSP Instruction	Machinery	100	30 minutes	As required		y		y		

SAFETY TRAINING PROGRAMS — YARD 09

PROGRAM TITLE	Trade or Craft	Pct.	Duration	Frequency	Yes	Attend	Test	Yes	Mandated	By
Hand Safety - Supervisor's Safety Briefing	All	100	15 minutes	Semi-annually		y		y		
Hazard Communication - New Hire Orientation	All	100	15 minutes	Once		y		y	y	OSHA
Hazard Communication - Super. Safety Briefing	All	100	15 minutes	Twice a year		y		y	y	OSHA
Hazard Communications for Supervisors	All Supers	100	1 hour & 15 minutes	Annually		y		y		
Hearing Conservation	All	100	30 minutes	Twice a year		y		y	y	OSHA
Inert Gas - JSP Instruction	All	100	15 minutes	Annually		y		y		
Inert Gas - Manual of Safety Regulations	All	100	15 minutes	Annually		y		y		
Inert Gas - Supervisor's Safety Briefing	All	100	15 minutes	Annually		y		y		
Lifting & Handling Gear - Supervisor Safety Brief.	All	100	15 minutes	Twice a year		y		y		
Lifting & Handling Gear - Safety/Fire Training	Safety	100	2 hours	Once		y		y		
Lock Out/Tag Out Training	Maintenance	100	1 hour	Once		y			y	OSHA
	Safety	100	1 hour	Once		y			y	OSHA
Manlift Training	All	12	1.5 hours	Once	y		y			
Mobile Crane Operator Training	Transportation	100	40 hours	Once		y				
OSHA Citations & Standards Training	Safety	750	1 hour	Once		y		y		
Paints & Coatings - JSP Instructions	Painters	100	30 minutes	As required		y		y		
Pendant Control Crane Training	Carpenters	5	3 hours	Once	y		y			
	Electrical	5	3 hours	Once	y		y			
	Hull	5	3 hours	Once	y		y			
	I.P.D.	5	3 hours	Once	y		y			
	Joiners	5	3 hours	Once	y		y			
	Machinery	5	3 hours	Once	y		y			
	Pipe	5	3 hours	Once	y		y			
	Riggers	5	3 hours	Once	y		y			
	Sheetmetal	5	3 hours	Once	y		y			
Portal Crane Operators	Operators	100	40 hours	Once		y				
Rail Haz. Mat. Responder	Fire	5	8 hours	Once		y				
	Safety	10	8 hours	Once		y				
Respirator Training - New Hire Orientation	All	100	15 minutes	Once		y		y	y	OSHA
Respirator Training - Super. Safety Briefing	All	100	15 minutes	Twice a year		y		y	y	OSHA
Right-To-Know	Fire	100	2 hours	once		y				
Right-To-Know Training	Safety	100	2 hours	once a year		y				
Safety Orientation for New Hires	All	100	1 hour	Once	y	y				
Scott Air Pak Training	Fire	100	4 hours	Annually		y		y		
	Safety	100	4 hours	Annually		y		y		
Specialized Safety - Apprentices	All	100	1 hour	Once		y				
Supervisor's Safety Manual Training	All Supers	100	30 minutes	Once		y		y		
Supervisory Update Program	All Supers	100	45 minutes	Once		y		y		
Water, Boiler & Sanitation Chemicals - JSP Instr.	Machinery	100	30 minutes	As Required		y		y		
	Pipe	100	30 minutes	As required		y		y		
Welder Training	All	100	.5 hour	Once		y				
Welding & Burning - Super. Safety Briefing	All	100	15 minutes	Twice a year		y		y		

SAFETY TRAINING PROGRAMS — YARD 11

PROGRAM TITLE	Trade or Craft	Pct.	Duration	Frequency	Yes	Attend	Test	Yes	Mandated	By
Asbestos	Insulators	14.00	4 hours	Annually	y		y	y	y	OSHA
	Mach. Install.	6.60	4 hours	Annually	y		y	y	y	OSHA
	Maintenance	14.00	4 hours	Annually	y		y	y	y	OSHA
	Pipe	.05	4 hours	Annually	y		y	y	y	OSHA
	Sheetmetal	1.00	4 hours	Annually	y		y	y	y	OSHA
	Shipfitters	6.30	4 hours	Annually	y		y	y	y	OSHA
	Welders	.10	4 hours	Annually	y		y	y	y	OSHA
Brazing	Electrical	.40	100 hours	Once	y		y		y	U.S. Navy
	Maintenance	2.00	100 hours	Once	y		y		y	U.S. Navy
	Pipe	35.00	100 hours	Once	y		y		y	U.S. Navy
	Sheetmetal	.40	100 hours	Once	y		y		y	U.S. Navy
	Welders	2.00	100 hours	Once	y		y		y	U.S. Navy
Crane Safety	Clean Svc.	1.00	12 hours	Once	y		y			
	Electrical	1.00	12 hours	Once	y		y			
	Fabrication	30.00	12 hours	Once	y		y			
	Gen. Foundry	1.00	12 hours	Once	y		y			
	Machine Shop	1.00	12 hours	Once	y		y			
	Maintenance	1.00	12 hours	Once	y		y			
	Mat'l. Supply	1.00	12 hours	Once	y		y			
	Painters	1.00	12 hours	Once	y		y			
	Pipe	1.00	12 hours	Once	y		y			
	Prod. Cntrl.	1.00	12 hours	Once	y		y			
	Riggers	12.00	12 hours	Once	y		y			
	Sheetmetal	1.00	12 hours	Once	y		y			
	Shipfitters	3.00	12 hours	Once	y		y			
	Surp. Matl. Sales	1.00	12 hours	Once	y		y			
	Toolroom	1.00	12 hours	Once	y		y			
Electrical Safety	Electricians	72.00	2.5 hours	Once	y		y			
Fire Warden	Insulators	.20	2 hours	Triennially	y		y			
	Riggers	.01	2 hours	Triennially	y		y			
	Weld. Svc.	.50	2 hours	Triennially	y		y			
	Welders	16.00	2 hours	Triennially	y		y			
Fire Watch	Insulators	6.00	2.5 hours	Triennially	y		y			
	Mach. Install.	9.60	2.5 hours	Triennially	y		y			
	Sheetmetal	50.00	2.5 hours	Triennially	y		y			
	Shipfitters	59.80	2.5 hours	Triennially	y		y			
	Welders	90.00	2.5 hours	Triennially	y		y			
Hazard Communications	All	100.00	1 hour	Annually	y	y		y	y	OSHA
Hearing Conservation	All	100.00	20 minutes	Annually	y	y		y	y	OSHA
Lead Worker	Insulators	.20	40 hours	Once	y		y			
	Mach. Install.	7.60	40 hours	Once	y		y			
	Pipe	.05	40 hours	Once	y		y			
	Sheetmetal	4.00	40 hours	Once	y		y			
	Shipfitters	20.30	40 hours	Once	y		y			
	Weld. Svc.	.50	40 hours	Once	y		y			
	Welders	11.00	40 hours	Once	y		y			

SAFETY TRAINING PROGRAMS — YARD 11

PROGRAM TITLE	Trade or Craft	Pct.	Duration	Frequency	Yes	Attend	Test	Yes	Mandated	By
Respirator	All Waterfront	100.00	2.5 hours	Triennially	y		y	y		
Stage Building	Stagebuilders	100.00	40 hours	Once	y		y			
Torch Safety	Fabrication	35.00	40 hours	Annually	y		y	y		
	Gen. Foundry	36.00	40 hours	Annually	y		y	y		
	Insulators	4.00	40 hours	Annually	y		y	y		
	Mach. Install.	6.60	40 hours	Annually	y		y	y		
	Maintenance	19.00	40 hours	Annually	y		y	y		
	Pipe	50.00	40 hours	Annually	y		y	y		
	Sheetmetal	37.00	40 hours	Annually	y		y	y		
	Shipfitters	61.00	40 hours	Annually	y		y	y		
	Weld. Svc.	30.00	40 hours	Annually	y		y	y		
	Welders	85.00	40 hours	Annually	y		y	y		
Welding and Carbon	Electrical	11.00	250 hours	Once	y		y			
	Insulators	6.00	250 hours	Once	y		y			
	Mach. Install.	8.40	250 hours	Once	y		y			
	Maintenance	32.00	250 hours	Once	y		y			
	Pipe	50.00	250 hours	Once	y		y			
	Riggers	1.60	250 hours	Once	y		y			
	Sheetmetal	57.00	250 hours	Once	y		y			
	Shipfitters	77.00	250 hours	Once	y		y			
	Weld. Svc.	.50	250 hours	Once	y		y			
	Welders	74.00	250 hours	Once	y		y			

APPENDIX 3

DISCUSSION OF RESPONSES TO CERTAIN QUESTIONS

Reference was made earlier (see Background) to a meeting held prior to publication of this report to review the responses to the survey questiomaire and to discuss safety and health program matters not covered, or not sufficiently covered, by the survey document. That meeting was held on Monday and Tuesday, October 22 and 23, in the Poydras Room of Le Pavillon Hotel in New Orleans. In attendance in addition to the author were representatives of six (four private and two public) of the nine shipyards that participated in the survey.

At the outset of the meeting the issue of anonymity was addressed. Because each attendee had deciphered how his/her yard was designated simply by comparing hi/her responses with those recorded in the survey and because everyone was identified during the introductions, it was agreed that for the purpose of discussions among the attendees at this meeting only the matter of anonymity should be compromised so as to optimize the fruitfulness of those discussions.

It was also the consensus of the attendees that, as a general statement, the survey document was complete although some of the questions could have been more artfully crafted.

The Agenda for the meeting was designed so that an opportunity was provided for review and comment on the responses to each item in the survey document.

For the purpose of facilitating the meeting the survey document was broken into logical segments as follows:

Segment 1 – Questions 1 through 15
Segment 2 – Questions 16 through 30
Segment 3 – Questions31 through 44
Segment 4 – Questions 45 through 55 (except Questions 48 and 55)
Segment 5 – Questions 56 through 62*
Segment 6 – Questions 64 through 73
Segment 7 – Questions 74 through 84
Segment 8 – Questions 48, 54 and 85
Segment 9 – Training Programs
Segment 10 – Matters Not Covered in Survey
Segment 11 — General Discussion

While the review of responses to the questions was thorough, not every question was examined in detail. Where the consensus was that the questions and their answers spoke for themselves they were passed over. Examples are: Q.4, Q.5, Q.7, Q.9a, Q.13, Q.17, Q.21, Q.22, Q.31, Q.49, Q.83 and Q.84. In each such instance all participating yards provided the same answer. There was also little discussion of those responses which were the same from the attendees but may have been different from a yard not represented in the meeting. Also, by consensus, there was little or no discussion about responses which simply reported on the facts of everyday shipyard life. Responses to the questions about clinic visits, safety inspections and accident investigations fall into that category.

Pertinent comments of the meeting participants with respect to responses to questions within each segment are as follows:

Segment 1 Q.1 through Q.15

In order for any safety program to be effective it must be reflective of and be guided by the organization's philosophy and policy in occupational safety and health (OSH) matters. That policy must be known to and clearly understood by all members of the organization. There is no room in an effective safety program for ambiguity in top management's dedication of purpose. A formal written statement setting forth an organization's guiding principles, its objectives and its policy to achieve those objectives is a first step in eliminating ambiguity. The larger the organization the greater the difficulty in informing and educating the members, hence, the greater need for committing the policy to writing. The fact that the organization is willing to commit its policy to writing in and of itself sends a message of its sincerity.

While the lack of a written statement of policy, all other things being equal, would not invalidate an otherwise sound safety program that absence would be conspicuous to those inside and outside of the organization and would send an improper or, at best, ambiguous message which, as noted above, is to be avoided at all costs.

Perhaps even more important than the issuance of a formal written statement of OSH policy, however, is the dedication with which the organization implements and enforces that policy. The antennae of the members of an organization are keenly sensitive to the parallelism between policy and its implementation. Deviations from parallel do not go undetected. Repeated deviations without adequate explanation force questions, verbalized or mute, as to whether the policy is both words and actions or words without action.

Top management's consistent active involvement in policy implementation as reflected in the safety program is crucial to the effectiveness of that program. The degree of its involvement is observed and evaluated on a daily basis by employees in every level within the organization. If employees in any level perceive that the or-

*The original survey document contained a Q.63 but it was dropped along the way because, as agreed by all participants, it was basically unanswerable.

ganization's actual commitment is less than indicated in the statement of policy that perception will govern their conduct and the program will suffer. Top management at one of the yards summarized that yard's philosophy essentially as follows:

"This organization believes that it has a moral obligation to ensure and the employees have a right to expect that if they come to work with all of their body parts working they will go home that way when their shift is over. "

In response to the question concerning the manner in which top management's commitment to the safety program is demonstrated (Q.48), that shipyard stated: "By constant daily involvement. "

Those attendees at this meeting who are familiar with that yard and its top management were unanimous in acknowledging that support for the above cited statement of philosophy is, in fact, demonstrated by constant daily involvement. Hence, the impressive effectiveness of that yard's safety program.

As to Q.3, the consensus was that if the question had been phrased to ask who has ultimate responsibility for overall OSH performance or "where does the buck stop?", different responses would have been given. The important point to note here, however, is that, contrary to the belief held in some circles, at each of the participating shipyards ultimate responsibility does not rest in the Safety Office.

Recognizing that the causes of all accidents fall into two basic categories - unsafe conditions and unsafe acts - it is generally held that management is responsible for providing safe working conditions and employees are responsible for acting in a safe manner. Beyond those considerations it is generally acknowledged that management has a responsibility to ensure that employees are aware that certain acts are unsafe and are aware of ways to avoid them. It fulfills that responsibility by providing formal and informal training, both on-the-job and in classroom; it ensures that first and second line supervisors are similarly aware and it holds those supervisors accountable for their own safety and health performance and the safety and health performance of the employees under their supervision. Management also imposes discipline on employees and supervisors who perform unsafe acts and supervisors who tolerate or condone the performance of unsafe acts.

While all of the yards indicated that they review their supervisors' safety and health performance, the time periods for such performance reviews vary considerably. In the written replies to the survey document, only one yard responded that, although performance reviews were conducted on a regular basis, behavior that deviated from an acceptable norm is addressed as it occurs. Discussion in the meeting, however, indicated that all yards do, in fact, apprise supervisors of their performance whenever it varies from an acceptable standard.

With a few exceptions the responses to Q. 11 "Does staff safety person have authority to initiate discipline for safety violations?" parse with the responses to Q.3 that the safety office is not responsible for overall OSH performance. In most cases the safety staff person's responsibility is to report the safety violation to production management (department head, first line supervisor, etc.) which then may or may not impose some form of discipline pursuant to the yard's overall discipline program.

One attendee made the observation that in some shipyards production supervisors all too frequently avoid imposing discipline for safety violations unless prodded by safety staff.

Another asserted that some yards permit supervisors to impose discipline for OSH program violations on employees in their departments but not under their direct supervision and even across departmental lines.

As to Q. 15 "How are accident costs allocated within the budgetary process?" the consensus was that it is impossible to establish an enforceable budget in the areas of accidents, accident costs and workers' compensation costs.

Segment 2 Q.16 through Q.30

Responses to Q. 16 requalifications of safety personnel are governed by written qualifications at each operation and are not merely a reflection of the qualifications of the employees currently filling the billets. It was noted that most organizations require that applicants possess certain basic minimum qualifications.

Discussion of Q. 18 revealed that if the adverb "primarily" was intended to be the operative word, responses would have changed to a combination of primarily supervisor and/or primarily employee.

No conclusions were drawn from the different ratios of fill-time safety and health personnel to blue collar workers in Q. 19. It was noted that the ratio is a factor at least in the training area and in other administrative areas which bear on the safety program and specific areas of emphasis. On the other hand, it was suggested that a higher ratio may reflect that safety responsibilities have been shifted to others.

At one yard the establishment of individual craft Safety and Health Committees is of recent origin. It is called The Employee/Management Safety and Health Task Force. The membership of fourteen is drawn from a yard-wide pool, and is made up of an equal number of hourly employees and front-line supervisors who are replaced on a rotating basis about once every six months.

The meetings of the Task Force, which are scheduled on an as-needed basis, are also attended by an in-house facilitator. Subject matter for discussion is limited to safety and health matters only and may be self-identified or identified by management. One of the primary reasons for instituting the Task Force concept was to increase the level of activity in safety and health matters on the part of the hourly work force.

Segment 3,4 and 5 Q.31 through Q.62

With the exception of Q.35 there was no significant discussion of responses to these questions because they were regarded simply as reporting on the facts of everyday shipyard life and, as such, did not provide material for meaningful dialogue.

Q.35 stimulated discussion of the frequency and severity of back and knee injuries and of steps being taken at some locations to address the problem. One yard cited as its experience that the total number of injuries has diminished but the amount of lost time attributable to them and to back and knee injuries especially has been increasing. It was also pointed out that reinjuries of backs and knees are more costly than initial injuries. If ways can be found to prevent the second injury, the potential for significant cost savings is great.

One approach that is being studied is referred to as work-hardening. In work-hardening the injured's rehabilitation includes duplicating the physical activity the employee performs in the everyday exercise of his craft. Another (which falls under the heading of Personal Protective Equipment covered by Q.65) is the wearing of a distinctive type of belt that adds support to the injured's lower lumbar and stomach area. The belt also serves as a reminder of the use of proper body mechanics. Three of the yards indicated that the wearing of such a belt is mandatory in each case in which an employee who has suffered a back injury returns to work. The belt is provided at no cost to the employee.

Q.63 There is no Q.63 in the Survey

Segment 6 Q.64 through Q.73

The fact that in the public shipyards the employees do not pay the cost of any of the personal protective equipment (PPE) required to be worn generated some discussion. In the first instance the accuracy of the annual PPE cost per employee was brought into question. One would assume that each of the public shipyard's PPE costs would be within a close range of one another and, as a group, would be significantly higher than those of the private shipyards. The fact is, however, that the public yards show a lower than average cost and the private shipyards show a greater than average cost, just the opposite of what one would expect. This phenomenon raised doubts on the part of some of the attendees as to the accuracy of the public shipyards' numbers.

As a matter of general information, the reasons given for the absence of cost figures for two of the shipyards are: one shipyard alleged that its accounting practices did not readily identity those costs and the other yard, for its own reasons, chose not to provide them.

The discussion also explored the different practices at the yards with respect to which items of personal protective equipment are provided.

The discussion also touched on an apparent inconsistency between requiring employees to buy certain of their own personal protective equipment and a claimed managerial dedication to safe working conditions and practices. The consensus was that the information in the survey did not support a conclusion of such inconsistency. That information reflected historical customs and practices at the various yards. The point to be stressed here is that this information reflects different purchasing practices and not different required use practices. Where practices in the yards are similar in respect of mandatory use of certain items of personal protective equipment, it is really irrelevant from a safety and health standpoint whether the management provides it or the employees purchase their own - the amount of protection provided is the same.

The following general observations were made with respect to the matter of incentives referred to in Q.67:

- Structured incentives, like games and lotteries, as rewards for achieving certain safety records have no lasting impact. On the other hand, long term incentives tied directly to improved safety performance do have a positive effect.
- "PR" efforts do have an immeasurable, and perhaps even minimal, but nevertheless, positive effect in reducing accidents. "PR" efforts were described as spur of the moment rewards to individual employees in recognition of a noteworthy act of safety or other achievement in the safety and health area. Types of rewards mentioned ranged from money clips and pens and pencils with the organization's logo, to tickets to a sporting event, to picking up the tab for an employee and the employee's spouse or date at a better than average restaurant.

Segment 7 Q.74 through Q.84

There was no significant discussion of responses to these questions because they were regarded simply as reporting on the facts of everyday shipyard life and, as such, did not provide material for meaningful dialogue.

Segment 8 Q.48, Q.54and Q.85

Much of the discussion of responses to Q.48 "How is Top Management's commitment to safety demonstrated" was a revisit to the material covered in the comments with respect to the responses to Q. 1. In essence, the degree of commitment would range from some active personal commitment on the part of top management in some of the participating yards, to significant active personal commitment in some others. It is questionable that any of the yards, save one, would compare favorably to a standard of strong active personal commitment; one yard's top management demonstrates outstanding active personal commitment bordering on zealotry. The consensus is that that is the standard against which all yards should be measured.

Most of the balance of the time in the meeting allocated for structured discussion was dominated by keen interest on the part of all participants in a pre-work flex and stretch program in effect on a voluntary basis in one of the shipyards. That yard reports with pride and an obvious sense of accomplishment on a program that began, with considerable trepidation and hesitancy, with about 20 blue collar employees in one shop about 18 months before this meeting.

For between eight and ten minutes after the start of their shift each day the employees follow a structured program of flexing, stretching and bending to limber their joints and muscles before starting to work.

As was anticipated in the beginning, grown men, macho-types or not, were reluctant to waste their time going through "sissy' routines which, because they were so tame, they assumed would do nothing for them. The flexing, stretching and bending exercises are designed to be performed without pain and, of course, everyone has heard the saying "No pain, no gain. "

Nevertheless, over time, reluctance gave way to tolerance and tolerance eventually turned to a positive attitude to the point where, currently, more than fifteen percent of the blue collar workforce is engaged in the pre-work flexing, stretching and bending program.

Without any statistical evidence of the results of the program, top management is very supportive of it and is hopeful of reaching one-hundred percent voluntary participation. The fact that voluntary participation has accelerated to over fifteen percent is viewed as a strong indication of its success.

One yard disclosed that it had recently relieved its foremen of the responsibility to write reports of accidents occurring under their direct supervision. Under the new experimental procedure that responsibility has been assigned to the general foremen. This represents a significant departure from what is virtually standard practice in the industry. One of the reasons given for the change was to relieve the first line supervisors of some of their administrative duties, providing them with more time for direct on-the-job supervision. Another reason was to bring about greater involvement of the general foremen in that and related elements of the safety program. It was stressed that this change in procedure was implemented on an experimental basis and is being evaluated on a continuing basis.

Segment 9 Training Programs

The only discussion of this part of the Survey was that, although it is recognized as being somewhat of a snapshot of training activity in certain specific safety training programs at a specific point in time, it nevertheless gives the reader an indication of the types of training provided to the various crafts in some of the yards.

Segment 10 General Discussion of Matters Not Covered in the Survey

At the conclusion of the meeting it was suggested by one of the attendees that the group attempt to prioritize the elements of safety programs using, as a rough guide, a shorthand version of the questions in the survey document. He had listed each element on a separate sheet of notepaper and those sheets were spread out randomly on the conference table. The object was for the attendees, acting simultaneously but independently, to physically move the sheets into one of the three groups listed below:

Designation	Description
PI	Basic Core Elements.
P2	Elements essential to a complete safety program. Enhancements of PI elements.
P3	Complementary elements to those considered essential but to a lesser extent than P2 elements.

In sorting out the elements the participants were free to discuss and debate until a consensus was achieved.

When consensus was achieved as to which elements belonged in Pl, P2 and P3, they were then asked to prioritize the elements in each group following the same method. (This prioritization process is a take-off on what is called the Nominal Group Technique.)

For reporting purposes an element identified as (1) was given the highest priority, (2) the next highest and so on. The results are as follows:

PI — Basic Care Elements

(1) Top Management's active involvement on a daily basis in OSH.
(2) OSH is integrated into daily operations.
(3) Supervisors are held accountable for OSH.
(3a) OSH performance is daily responsibility of line supervision.

(4) OSH is in incorporated in other shipyard policies.
(4a) Overall OSH responsibility is fixed in shipyard.
(4b) Primary responsibility for OSH is fixed.
(5) Shipyard has adequate medical treatment for injured employees.
(6) Discipline is used for non-compliance with OSH standards.
(6a) Shipyard has process for employees to report unsafe conditions.
(7) All shipyard employees receive initial OSH training.
(8) Shipyard has OSH policy.
(8a) OSH decisions are consistent with overall shipyard goals.
(9) Supervisors are rewarded (positive or negative) for OSH performance.
(9a) Supervisors are frequently apprised of OSH performance.
(9b) OSH standards are communicated to line supervision.
(9C) Supervisor's OSH performance is measured.
(9e) Shipyard has other adequate systems to measure OSH performance.
(10) Comprehensive accident investigation with follow-up.
(11) OSH performance data is on agenda of management meetings.
(12) Employee protection through engineering, administrative controls and PPE.
(13) Osh Director is adequately placed in shipyard organization.
(14) Managers/Supervisors can stop unsafe work.

P2 **– Elements Essential to a Complete Safety Program.**

Enhancements of PI Elements

(1) Formal OSH inspections are made of all work places.
(2) Formal OSH housekeeping inspections are made of all work places.
(3) There are adequate numbers of OSH committees in the yard.
(4) OSH performance is treated on a cost center basis.
(5) Pre-employment physicals are conducted.
(6) Injury/Illness rates are effectively used.
(7) Shipyard has effective substance abuse program.
(8) Accident data are used to make changes to OSH program.
(9) Workers are rewarded for OSH performance.
(10) Adequate ratio of OSH staff to workers.
(lOa) OSH function is adequately staffed.
(lOb) OSH staff assist line supervision.
(11) OSH Director is adequately qualified.
(12) Shipyard has adequate OSH training budget.
(12a) Shipyard has formal OSH training program.
(13) OSH training is periodically evaluated for effectiveness.
(14) Shipyard employees receive continual OSH training.
(15) OSH training program uses effective teaching methods.

P3 — Complementary Elements to Those Considered Essential But to a Lesser Extent than P2 Elements

(1) Minor accidents are investigated.
(2) Responsibility, management and control of PPE budget is assigned.
(3) Accident prevention performance is measured.
(4a) OSH staff reviews design and engineering plans.
(4b) OSH staff approves new or modified work processes.
(4C) OSH specifications are included in new equipment purchases
(4d) OSH staff approves new equipment before use.
(5) OSH staff initiates discipline.
(6) Other yards' accident data are used to evaluate own yard's OSH program effectiveness.
(7) Shipyard has staging certification program.

NOTES